

# History's greatest Mysteries

# All-powerful brotherhoods

# Do secret societies rule the world?

# Riddle of the Dead Sea Scrolls

# Did the Vatican suppress examination of the Dead Sea Scrolls?

# Prophet or liar?

Did Nostradamus really predict the future – or were his words twisted to fit world events?

# The secrets of Stonehenge

Was the stone circle used for pagan death rites?

# KING ARTHUR

**Did he really exist?  
New evidence may  
hold the key**

# ATLANTIS

Where did the legendary metropolis first described by Plato lay?

# TUTANKHAMUN

**Inbred and crippled, but how did Egypt's child king actually die?**









# GREATEST ENIGMAS OF ALL TIME

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Deep in the Central American rainforest, thousands of ruins lie hidden beneath the dense vegetation. They are the traces left behind by the Maya civilisation that inhabited modern-day Mexico for almost four millennia. Industrious kings ruled over millions, while the culture's scientific minds developed advanced mathematical calendars, and entire populations built pyramids that surpassed even those of the Egyptians. But suddenly, the Maya disappeared. No one knows

why, and 500 years later, historians are still hunting for the truth about their sudden demise.

The enigma of the Central American people's disappearance is just one of antiquity's many puzzles that academics have yet to solve. Although modern research constantly uncovers new evidence, the past is still full of myths, people and monuments that pose more questions than answers. In this special we examine some of the most fascinating. Enjoy the issue!

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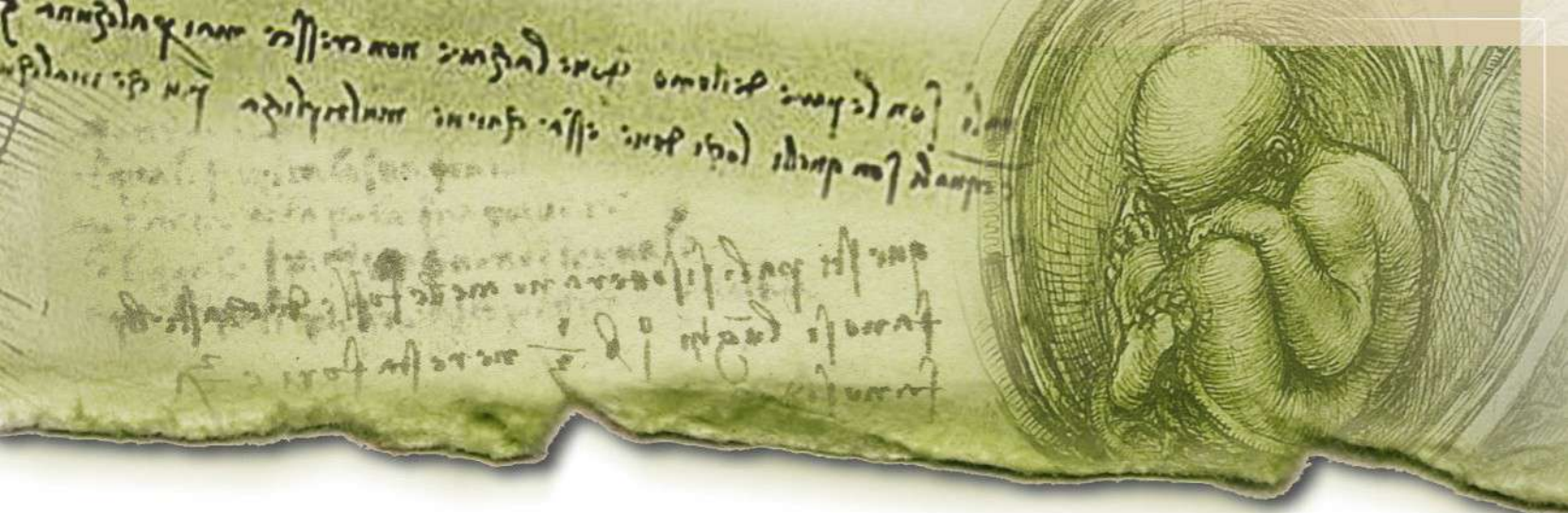
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3000 BC // Windmill Hill people build the first Stonehenge

2560 BC // The Great Pyramid of Giza is built



355 BC // Plato writes about Atlantis

280 BC // Lighthouse of Alexandria

150 BC // The Dead Sea Scrolls

# 3000 BC-AD 500

## A WORLD OF STONES

**3000 BC** Around five thousand years ago, mankind begins to construct its first giant stone monuments. On a windswept English plain in Wiltshire, primitive people dig an earthwork that will later give rise to Stonehenge. At the same time, Egyptian builders experiment by building increasingly lavish tombs for their pharaohs. The 146-metre-high Great Pyramid of Giza, completed around 2560 BC, is one of the finest examples of the mathematical and construction skills possessed by early civilisations.

## NEW CIVILISATIONS

**2000 BC** For two millennia, the Egyptians are the dominant power in the Mediterranean, but other civilisations are also growing. In China, the first dynasty – Shang – emerges, and in Central America, nomadic tribes settle on the fertile farmland of modern-day Mexico. These settlers will later become the Maya – one of the most advanced civilisations on the planet, mastering mathematics, astronomy and engineering. But the Maya suddenly abandon their cities and, to the surprise of archaeologists, disappear into obscurity for centuries.





1323 BC // Tutankhamun dies

600 BC // Iron Age people sacrifice humans in Northern Europe's bogs



AD 250 // The Maya usher in the Classic Period – the heyday of their civilisation

## HUMAN SACRIFICES

# 500 BC

The Celtic king Belinus builds a rampart around a settlement on the Thames, founding London. The pattern is the same throughout the previously deserted Northern European countryside, where small Iron Age communities begin to take shape. The transition from the Bronze Age is marked in particular by the growing warlike behaviour of primitive people and their increasing worship of gods. In a belt that stretches from Ireland to Poland, local tribes sacrifice everything from bronze jewellery to iron weapons and even people in the region's forbidding bogs.

## CHRISTIANITY'S RIDDLES

# AD 0-500

As the Romans crucify

Christ and crush Jewish rebellions in the province of Judea, a local sect seeks refuge in the desert. Here they write down their secrets from the time of Christ's birth and hide the scriptures in a network of caves near Qumran on the Dead Sea. The Dead Sea Scrolls are not found until 2,000 years later but have subsequently helped shed light on the earliest years of Christianity. Around the year AD 400, the Roman Empire succumbs to sustained attacks by barbarian tribes, plunging Europe into medieval darkness.

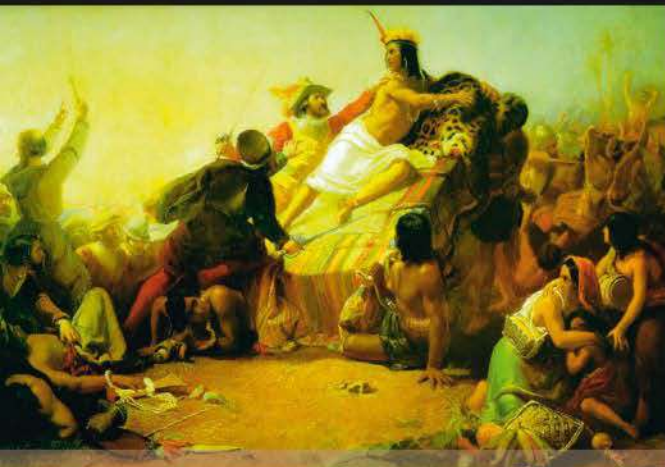




600 // *King Arthur unites Britain according to legend*



1200 // *Alchemy spreads across Europe*



1533 // *Spanish conquistadors hunt El Dorado*



1555 // *Nostradamus publishes his prophecies*



1663 // *John Aubrey begins*

# 500-1700

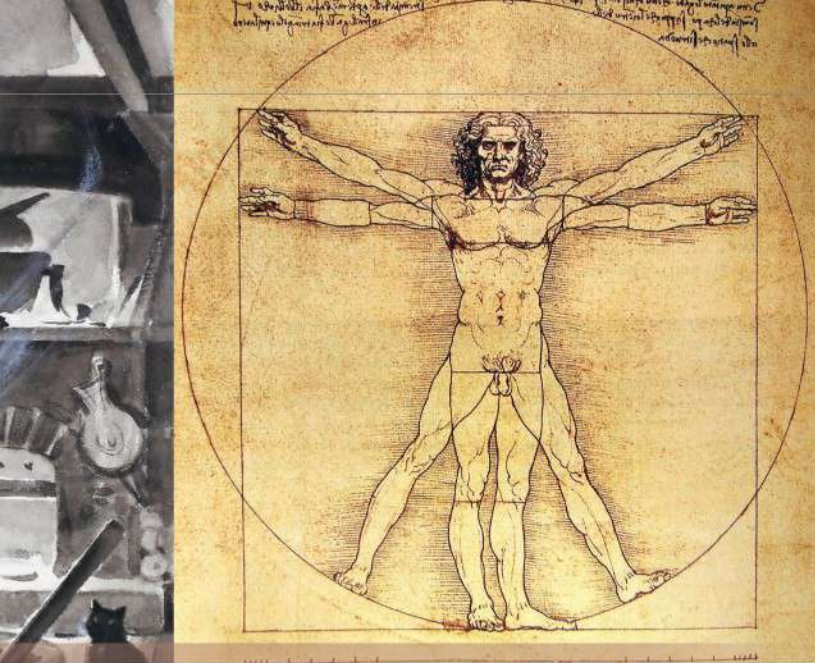
## MEDIEVAL MYSTERIES

**500-1000** With the fall of the Roman Empire, Europe sinks into almost forgotten darkness. Historians consequently find it difficult to tell historical fact apart from fiction during this period. In Britain, the legendary king Arthur apparently saves England from invading enemies and reunites the country. Scholars long believed the legend was just a thrilling tale told to children on dark winter nights, but in recent years, archaeologists have been slowly digging into the mystery of Arthur and have come across a number of surprising finds that may suggest the legendary king really did exist.

## A GENIUS IS BORN

**1000-1500** At the start of the new millennium, scientific progress grinds to a halt. Ancient Greek writings and Middle Eastern knowledge fade into obscurity. In their place, superstition flourishes and alchemists naively hunt for the perfect formula to create gold. With the Crusades, Arabic sciences reappear, and the rich Italian city-states launch a rebirth of science – the Renaissance. The greatest scientist of the age is the Italian polymath Leonardo da Vinci, who leaves behind inventions so far ahead of his time that they still fascinate scientists today.





1452 // *Leonardo da Vinci is born*



*excavating Stonehenge*



1665 // *German peat extractors find bodies*



1669 // *The man in the iron mask is put behind bars in France*

## SOUTH AMERICAN GOLD HUNT

# 1500-1600

In South America's rainforest,

conquistadors begin the hunt for the mythical El Dorado. For almost a century, they hunt for the City of Gold, exploring huge areas of the new continent in record time, and spreading death and destruction in their wake. Their efforts are futile – El Dorado's gold is never found. Europe is once again ravaged by plague, and superstition flourishes in the wake of the mysterious disease. In a small southern French town in Provence, Nostradamus, future famous fortune teller, begins to write down his prophecies.

## THE FIRST ARCHAEOLOGISTS >>>>

# 1600-1700

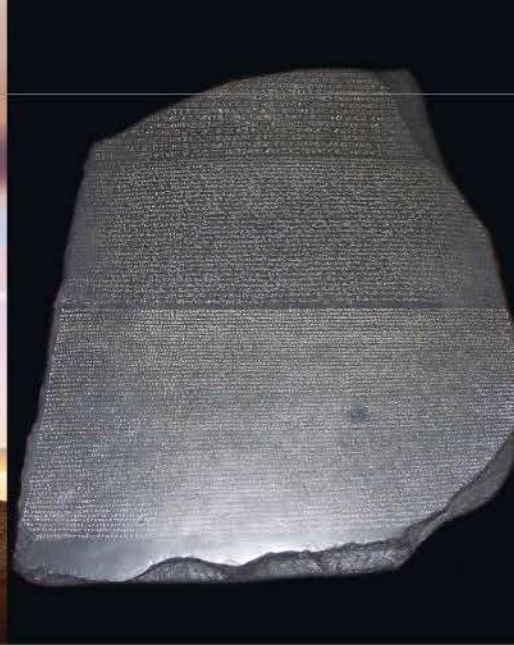
English antiquarian John Aubrey

begins the first excavation of Stonehenge and concludes that the monument was used as a gathering place for Celtic druids. Ever since, scholars have tried to shed light on its role – and have concluded that it has been everything from a healing centre to a burial ground. In Germany, horrified peat excavators come across a row of bodies under the peat as they dig for fuel. The bodies are so well preserved that the farmers can't possibly guess the truth: the victims have lain in the bogs for millennia preserved by their acidic, preservative waters.





1774 // James Cook arrives on Easter Island



1799 // French soldiers find the Rosetta Stone



1868 // Wealthy German Heinrich



1922 // Archaeologists find Tutankhamun's tomb



1950 // The Dead Sea Scrolls are assembled



2000 // Satellite

# 1700-today

## WONDER OF EASTER ISLAND

### 1700-1800

In 1774, James Cook visits a barren rocky

island in the middle of the Pacific Ocean where, to the Englishman's amazement, gigantic statues sit somberly along the shore. Cook finds it difficult to understand how the simple community has been able to carve, move and erect hundreds of stone figures around the island. The secret of these *moai* (statues) has puzzled archaeologists and historians ever since. In turn, the mystery of Egyptian hieroglyphics is solved when French soldiers find the Rosetta Stone and decipher the forgotten written language of the ancient Egyptians.

## HISTORY REDISCOVERED

### 1800-1900

A rich German excavates Troy after years

spent finding it. A Greek archaeologist finds traces of the magnificent Minoan civilisation on Crete. British expeditions search Egypt's royal tombs, and in South America, English adventurers follow in the footsteps of the conquistadors in search of El Dorado. In short, the nineteenth century becomes the age of the great expedition, when hundreds of fortune hunters, wealthy men and archaeologists successfully rediscover the past. However, the numerous discoveries soon raise more questions than answers for the scholars of the time.





*Schliemann excavates the lost Troy*



*archaeology uncovers Mayan cities*



*2008// Egyptian archaeologist Zahi Hawass discovers the cause of Tutankhamun's death*

## SCIENTIFIC BREAKTHROUGHS

### 1900-2000

While the nineteenth century was all about the search for lost mysteries of the past, the twentieth century sees science pass milestones on the road to solving archaeological mysteries. On Easter Island, Norwegian adventurer Thor Heyerdahl finds a plausible explanation for the origin of the moai, and soon after, a Bedouin stumbles upon thousands of fragments from the 2,000-year-old Dead Sea Scrolls. At the end of the century, historians begin a tough battle to clarify what led to the collapse of the Mayan Empire – work that continues to this day.

## MORE ANSWERS REVEALED

### 2000-

Satellite photos, DNA samples, high-tech scans and biological analyses reveal new insights. Forgotten Mayan cities emerge from the Central American jungles, and bog bodies and mummies are subjected to studies that enable academics to make informed guesses about, for example, the cause of Tutankhamun's death and the diet of a person living in prehistoric Northern Europe. Despite this advanced technology, however, historians and archaeologists have yet to find an answer for everything, lacking evidence that can solve such mysteries as who was King Arthur and what was the purpose of Stonehenge?







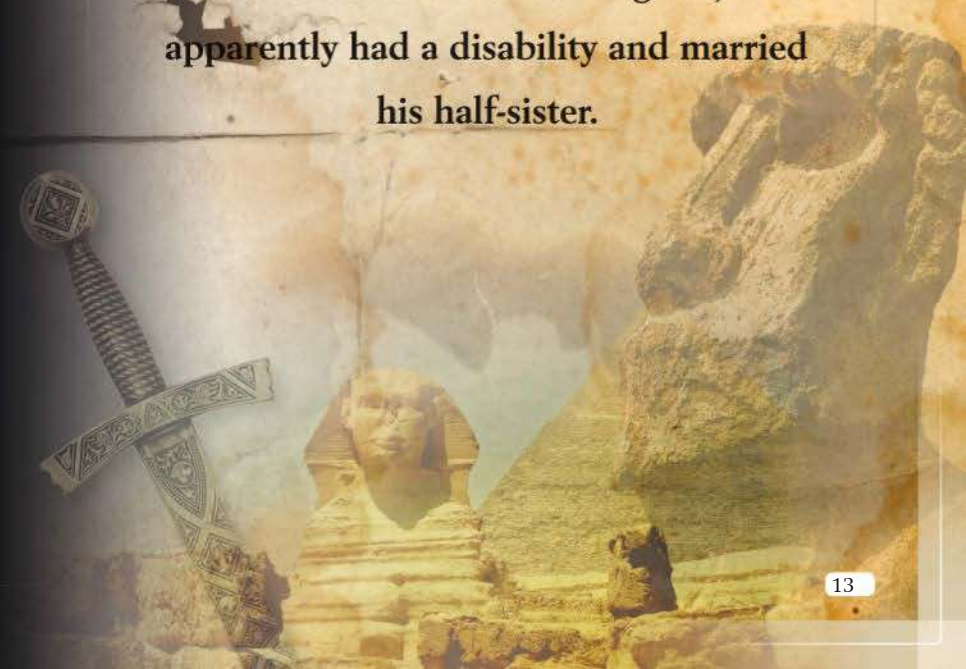


# EGYPT'S BOY KING

1342-1323 BC

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The golden face on Tutankhamun's death mask is one of the most famous in history. Behind the mask lies the incredible tale of a child king crowned at the age of nine, who both moved the empire's capital and changed the Egyptians' religion before he died at the age of 19. Tutankhamun's tomb, lost for millennia, contained priceless riches and raised countless questions. In recent years, modern technology has revealed crucial new evidence about the child king Tut, who apparently had a disability and married his half-sister.





## 1550-1323 BC

1550 BC

Pharaoh Ahmose founds Egypt's 18th Dynasty and the New Kingdom.



1373 BC

Tutankhamun's predecessor tries to change the kingdom's religion.



1333 BC

Tutankhamun takes the throne after a period of turmoil.

1323 BC

Tutankhamun dies, aged just 19, after ten years in power.



After five years of intense searching in the Valley of the Kings near Luxor, Howard Carter finally found Tutankhamun's tomb in 1922.

**T**he boy king, Tutankhamun, ruled a vast Egyptian empire that stretched thousands of kilometres from modern-day Sudan, north-east along the Mediterranean, to the Euphrates in Syria.

When Tutankhamun died, aged just 19, priests filled his tomb with gold and artefacts – the most magnificent ever found by Egyptologists. The royal tomb is Egypt's best preserved and it contained more than 5,000 elaborately decorated objects made of gold, alabaster, precious stones and fine wood – treasures that sand and stone managed to keep hidden from tomb robbers for more than three millennia.

The many art treasures emerged from the darkness and made their way into museums due to the tireless work of a British archaeologist, Howard Carter. He continued digging where other archaeologists had long since given up hope of finding more of the ancient Egyptians' relics. In particular, he hoped to find the tomb of a mysterious pharaoh called Tutankhamun.

### BOY FOUND TOMB'S DOORWAY

The name Tutankhamun first came to light in 1909, when an American, Theodore Davis, owned the exclusive rights to excavate the Valley of the Kings. There, on the west bank of the Nile, near ancient Thebes, Egypt's pharaohs were buried over a period of almost 500 years in a mighty complex of tombs, burial chambers and haphazard underground tunnels. The rulers hoped that the impassable valley would hide the untold treasures that they

took with them for their journey to the afterlife.

In 1909, Davis found a nearly empty underground chamber in the valley containing a small collection of jars, linen and other embalming equipment, which bore the hitherto unknown royal name of Tutankhamun. The American immediately concluded that he had found the looted tomb of an insignificant child pharaoh called Tutankhamun, and soon after declared the entire valley excavated.

Howard Carter, however, took a very different view. He was convinced that the underground chamber Davis had encountered was far too small to be a royal tomb. Tutankhamun's real burial place must therefore be somewhere in the Valley of the Kings, waiting to be discovered.

Davis died in 1914, but because of World War I, Carter had to wait until 1917 before he could begin digging in the area. By then, it had been seven years since anyone had found a new tomb in the Valley of the Kings.

Carter's simple but resource-intensive plan was to dig throughout the whole valley to find the entrance to Tutankhamun's tomb. Over the next few years, more than 100 men armed with shovels, pickaxes and small brushes meticulously worked their way through the Valley of the Kings. The enormous dig was funded by the wealthy George Herbert, 5th Earl of Carnarvon – a keen amateur archaeologist and Howard Carter's personal benefactor during several years of archaeological endeavours.

In 1922, after years of fruitless searching, Lord Carnarvon almost lost heart. But then a breakthrough occurred – a boy working on the dig happened to spot

a small step while putting down a vase. The archaeological team excavated the site and soon found the beginning of a set of descending steps and the top of a door. According to Egyptian custom, the door was sealed with plaster, embossed with a number of royal symbols – apparently unbroken. Carter saw that the marks dated from the reign of Tutankhamun and immediately sent for the Earl of Carnarvon.

"At last," Carter wrote. "Have wonderful discovery in Valley; a magnificent tomb with seals intact; re-covered same for your arrival. Congratulations."

### CHAMBER GLITTERED WITH GOLD

On 23rd November 1922, Lord Carnarvon arrived at the Valley of the Kings and excavations began straight away. As soon as the door at the bottom of the steps was fully excavated, it was clear that the tomb was indeed Tutankhamun's – the king's name was clearly embossed in several of the seals at the bottom of the door. Unfortunately, the excavations also revealed that the door bore clear evidence of tomb robbers.

Fearfully, Carter broke open the tomb door. Behind it he found a sloping passage filled with stones and gravel, which took several days to empty.

It was not until the afternoon of 26th November that the corridor was finally cleared. At the end of it was another door, which Carter and Carnarvon prepared to open.

Carter knocked a small hole in the door >>>

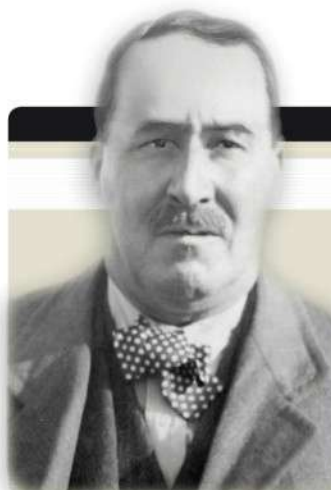
HOWARD CARTER 1874-1939

## THE ARDENT ARCHAEOLOGIST

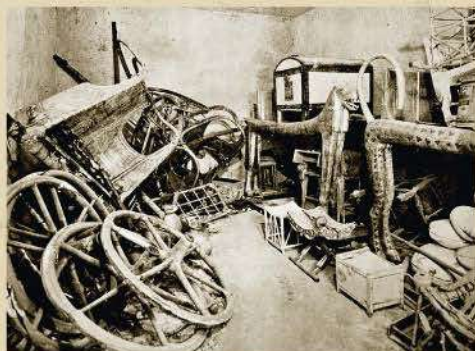
■ Howard Carter was only 17 when, as a young artist, he went to Egypt to draw archaeologists' discoveries. There he received the best possible education in Egyptology: the young Briton learned about mummies, temples, tombs and pyramids in the field from the likes of famous British archaeologist William Matthew Flinders Petrie. Hard work, a good knowledge of Arabic

and incredible talent soon made Howard Carter a household name in the sphere of Egyptian archaeology. In 1907, Carter secured the backing that became crucial to the discovery of Tutankhamun, when Earl George Herbert of Carnarvon decided to spend part of his fortune supporting Carter's research. 15 years later, the two Britons found Tutankhamun's tomb.

Artist – Archaeologist – Sought Tutankhamun for years







The tomb's antechamber contained priceless treasures, including Tutankhamun's golden chariot, exquisite chairs and animal figurines.



From the antechamber, Carter and his sponsor, Lord Carnarvon (right), glimpsed the burial chamber with its contents: Tut's sarcophagus.



Carter's discoveries officially belonged to the newly independent Egypt, and most of the finds ended up in the Egyptian Museum in Cairo.



Carter devoted his life to studying the many treasures from Tutankhamun's tomb – not least the child king's sarcophagus.



# VALLEY WAS INTENDED TO HIDE KINGS' TOMBS

Tutankhamun was a pharaoh of Egypt's Eighteenth Dynasty, which began to bury its rulers in the Valley of the Kings in the 1500s BC, rather than building mighty pyramids. The hope was that the inaccessible valley, west of Thebes, would keep the tombs hidden from thieves – but few were left untouched.

## AMUN'S POWERFUL SERVANT

- **Discovered:** 1799
- **Tomb:** The largest in the western part of the valley, and robbed and reused several times.
- **Who:** Amenhotep III worshipped the ancient god Amun throughout his 37-year reign. Apparently, the god must have favoured him – money poured in from Egypt's colonies, and the pharaoh used the riches on construction projects such as the Temple of Luxor.



## BOY KING

- **Discovered:** 1922
- **Tomb:** Best preserved so far, almost completely spared from tomb robbers.
- **Who:** Tutankhamun.



## EGYPT'S MOST POWERFUL WOMAN

- **Discovered:** 1799
- **Tomb:** Destroyed in ancient times.
- **Who:** Hatshepsut was the most powerful and longest-reigning of the six or seven female pharaohs in Egyptian history. She took power in 1479 BC because her stepson, Thutmose III, was too young to ascend the throne. The mummy (below), which archaeologists found in another grave, was confirmed to be Hatshepsut in 2007.



# EGYPT

## TUT'S FAMILY

- **Discovered:** 1898
- **Tomb:** Used as a hiding place for mummies, who were moved to safety. Tut's family ended up here.
- **Who:** The tomb originally belonged to the warrior pharaoh Amenhotep II, who was always depicted as an athlete and war hero.

## QUEEN'S PARENTS

- **Discovered:** 1905
- **Tomb:** Almost intact, containing everything from hunting and war equipment to musical instruments and furniture.
- **Who:** Yuya and Tjuyu were the in-laws of Pharaoh Amenhotep III. Although not royalty, they were given a grand funeral in the valley.

## DYNASTY'S LAST KING

- **Discovered:** 1908
- **Tomb:** Adorned with murals.
- **Who:** Horemheb died childless and was the last pharaoh of the Eighteenth Dynasty. Before that, he did all he could to erase the memory of his predecessors, who had tried to change Egypt's religion.



## NUBIAN LORD



- **Discovered:** 1899
- **Tomb:** Partially emptied by thieves.
- **Who:** A papyrus in the tomb of courtier Maiherpri suggests that, with his dark skin, he came from Nubia in the south.

The Valley of the Kings was long the destination of choice for Western archaeologists. Today, thousands of tourists visit the valley every day.

0 100 m

● Burial sites



and thrust a candle through, into the chamber beyond.

"Can you see anything?" asked the curious Lord Carnarvon.

"Yes, wonderful things," came the reply.

Behind the door was the most incredible sight any Egyptologist had ever seen. Tomb robbers may have visited in the ancient past, but they hadn't taken much with them. In his memoirs, Carter later described the moment when he first looked into the room:

"At first I could see nothing, the hot air escaping from the chamber causing the candle to flicker, but presently, as my eyes grew accustomed to the light, details of the room within emerged slowly from the mist, strange animals, statues and gold – everywhere the glint of gold."

Carter and Carnarvon widened the hole and crept into the room. Slowly, they moved among treasures, golden furniture and artefacts that had stood untouched for thousands of years.

Tutankhamun's mummy was nowhere to be found, but during the next day's explorations it became clear that it had to be behind a sealed door beyond the burial goods at the back of the chamber.

Carter and Carnarvon had to wait for permission from the Egyptian authorities on 29th November before they could break down the door, but Carter couldn't control his curiosity. By the evening of 28th November, the British men were back in Tutankhamun's treasure chamber.

Carter cut a hole in the bottom of the sealed door and squeezed through, followed by Carnarvon. In the room, the two Britons found what no archaeologist thought possible: a gigantic golden sarcophagus that almost filled the entire chamber. Carter and Carnarvon had done it. They had found the first intact sarcophagus, coffin and mummy in the Valley of the Kings. They had found the lost Tutankhamun.

#### CURSE OF THE MUMMY

The news immediately spread around the world, but Lord Carnarvon was only able to bask in his new-found fame for a short while. Five months after the discovery of Tutankhamun's tomb, the aristocrat died of blood poisoning in a Cairo hotel.

Rumours of an ancient hex that would harm anyone who disturbed the pharaohs' peace had existed for years, and straight away Carnarvon's death was interpreted as proof of the "mummy's curse".

A series of unexplained events that occurred in the following years further fuelled speculation. Some of the incidents befell Howard Carter's friend Sir Bruce Ingram, to whom Carter allegedly bequeathed one of the many artefacts from Tutankhamun's tomb. Shortly after Ingram received the gift, his house burned down – and when he rebuilt it, the house was flooded shortly afterwards.

However, a later investigation of the 58 people present when Tutankhamun's tomb



It was hard work hauling the many treasures out of Tutankhamun's tomb – but Howard Carter still wore a bow tie, of course.

and sarcophagus were opened revealed that only eight had died within 12 years of the event. Howard Carter himself did not die until 17 years after the discovery, when he succumbed to lymphoma at the age of 64.

#### TUT SUCCEEDED HERETIC KING

Since the discovery of Tutankhamun's tomb, archaeologists and historians have struggled to understand the life and, above all, the death of the child king, which is still shrouded in mystery.

Tutankhamun was born in 1343 BC and ascended the throne within ten years. Although Egyptologists knew he belonged to the Eighteenth Dynasty, it was unclear who his parents were and exactly how he came to power.

#### 243 years:

how long the Eighteenth Dynasty, to which Tutankhamun belonged, ruled Egypt.

kilometres north along the Nile to his newly built capital city of Amarna. Here the sun god Aten was to be worshipped as Egypt's new principal deity. Akhenaten adopted his name, which means "he who is useful to Aten", for the same reason. Only Akhenaten and his queen, Nefertiti, were worthy of worshipping the sun god – everyone else had to worship Akhenaten and Nefertiti themselves.

Akhenaten's attempt to change the religion was not well received, either by ordinary Egyptians or by the priests of Thebes. The heretic king's rule ended in chaos. After his death, two pharaohs ruled for short periods – the first possibly Queen Nefertiti, the second a mysterious pharaoh called Smenkhkare, about whom archaeologists know almost nothing.

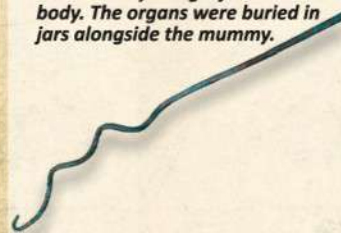
When calm returned to the royal court, a mere nine-year-old boy was sitting on the

## ART OF EMBALMING

### EMBALMING TOOK 70 DAYS

The ancient Egyptians believed in life after death and embalmed the pharaohs so they could be preserved for eternity. They perfected the technique over the centuries. For religious reasons, embalmers always took 70 days, although they could probably perform the embalming much faster.

**1** The internal organs were pulled out through a small incision in the abdomen, and the brain was fished out through the nose with a long hook. The heart was the only thing left in the body. The organs were buried in jars alongside the mummy.



**2** The deceased was then covered with salt or natron for 35 to 40 days to draw all the liquid out of the body. The embalmers then smeared the corpse with perfumed ointments.



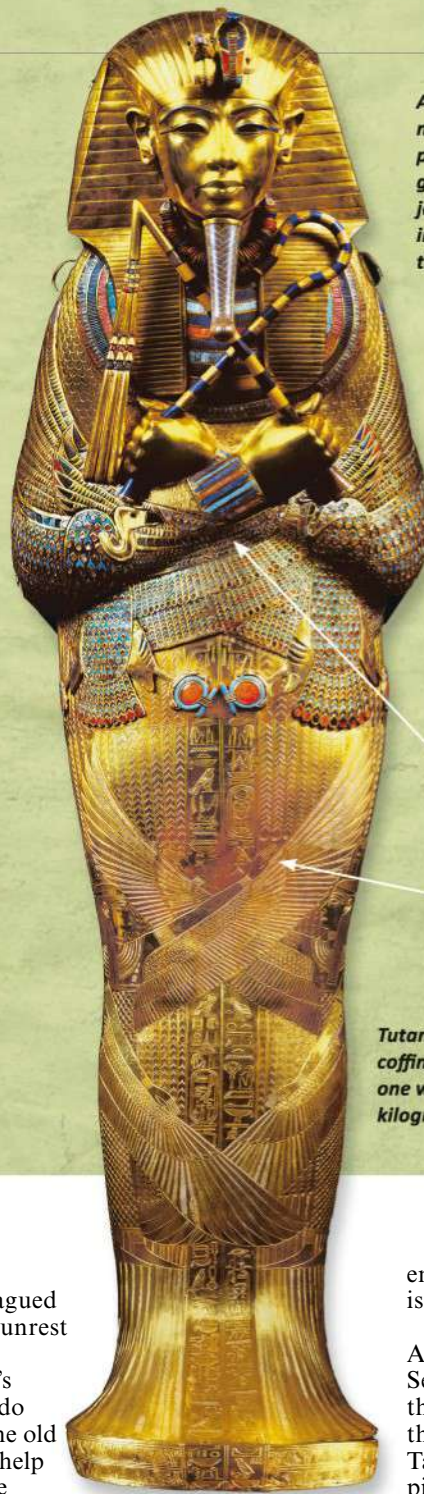
**3** Finally, the embalmers wrapped the desiccated body in several layers of fabric strips and larger pieces of cloth. On the chest, the priests placed amulets to help the dead safely on their journey to the afterlife.



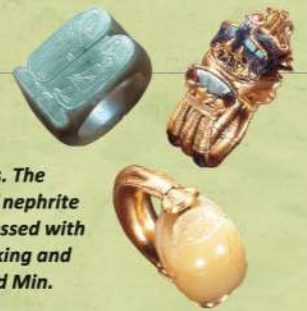


# TUT'S TOMB ABOUNDED WITH RICHES

Archaeologists found more than 5,000 artefacts in the tomb of the young pharaoh Tutankhamun. The treasures were meant to ensure the king had a dignified and comfortable afterlife and showcase the incredible skills of ancient Egyptian craftsmen. At the same time, Tut's tomb bears witness to the unimaginable riches that must have lain in the tombs of other, more powerful pharaohs before tomb robbers emptied them. If melted down into gold bars, Tut's treasures would be worth millions of dollars today.



Around the mummy were placed 15 rings. The green one is of nephrite jade and embossed with images of the king and the fertility god Min.



The gold and enamel necklace symbolised the ancient culture goddess Nekhbet.

The goddesses Nekhbet and Wadjet wrapped their protective wings around the pharaoh.

Originally, the coffin was coated with a thick layer of perfumed oil, which had to be removed with solvents and heat.

Tutankhamun was entombed in three coffins, one inside the other. The innermost one was 1.88 metres high, weighed 110 kilograms and was carved in solid gold.

>>>> throne. His name was Tutankhaten – “the living image of Aten”.

Over the next two years, the capital was moved back to Thebes, the old gods were reinstated and the pharaoh changed his name to Tutankhamun – in honour of the ancient god Amun, who had been Egypt's most important deity before Akhenaten's failed religious revolt. Tutankhamun



Since 2007, Tutankhamun's mummy has been protected in an airtight coffin in its tomb. Here, tourists can see that the king had an overbite.

inherited a kingdom plagued by religious unrest after his predecessor's attempts to do away with the old religion. To help him rule, the young king had a number of powerful advisers – most notably the army commander Horemheb and the grand vizier Ay, who was close to the court and had acted as an advisor to the pharaohs since Akhenaten's predecessor, the mighty Amenhotep III.

## INHERITED A KINGDOM IN DISARRAY

Archaeological discoveries of more than 380 clay tablets at Amarna tell of the empire inherited by Tutankhamun, who was then just nine years old, and his powerful court in 1333 BC. For years, the Egyptian vassal states of Canaan, Syria and Sumer had constantly tried to extort money and gold from Egypt in return for their allegiance, which Pharaoh Akhenaten had alternately paid or threatened war if the vassals didn't submit to his rule. Further to the north-east lay the Egyptians' old

enemies the Hittites, who inhabited what is now modern-day Turkey.

Several of the tablets indicate that Akhenaten was not the ablest diplomat. Several ambassadors wrote home to say they were beginning to lose respect in the cities where they were stationed. Taken together, the tablets paint a picture of an Egypt that was losing its grip on the earlier pharaohs' kingdoms.

Among this chaos, Tutankhamun grew up and married Ankhesenamun, who was a few years older. Pictures found in Tut's tomb indicate that the young couple had a close and loving relationship. She is depicted giving him flowers and gifts, and accompanying him while hunting. But the love never bore fruit – Tutankhamun died suddenly at the age of just 19, leaving no heirs. In Tut's tomb, scientists found only the mummies of two stillborn girls.

What remains is the image of a pharaoh who assumed power at a young age and restored the old order in just a few years, only to die an early death, then fade into obscurity for more than 3,000 years.

## X-RAY SUGGESTED MURDER

The circumstances of the child king's death remain one of ancient Egypt's greatest





The scarab, which adorns Tut's bracelet, was one of the Egyptians' holiest symbols and associated with the sun god Khepri.

The pharaoh took a game of senet, probably the world's oldest board game, to the afterlife.



The tomb contained several thrones, including this masterpiece of elaborately decorated wood.

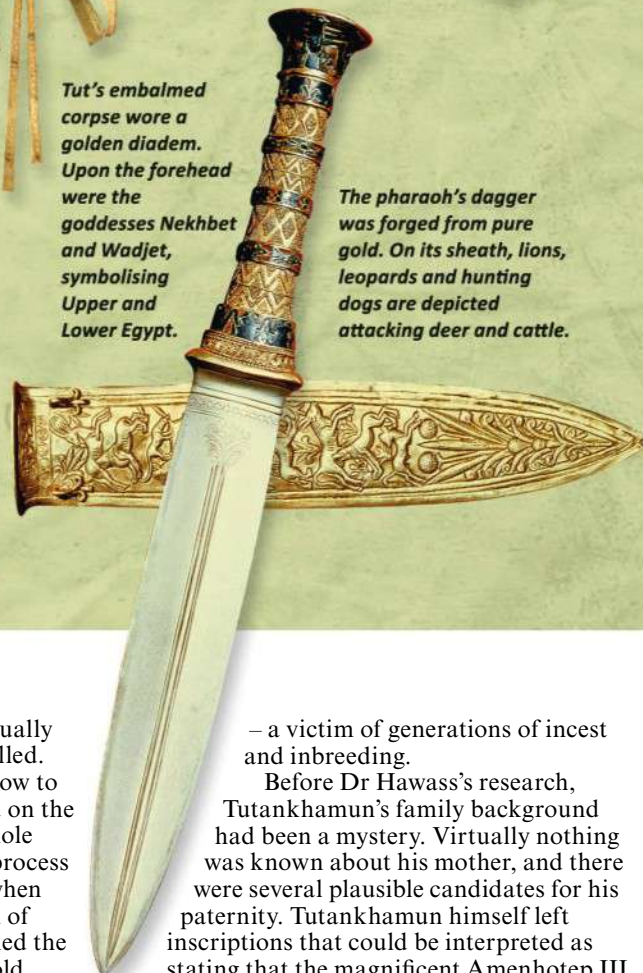


Tut's organs were kept in a special box, the lid of which consisted of a total of four alabaster goddess heads.



Tut's embalmed corpse wore a golden diadem. Upon the forehead were the goddesses Nekhbet and Wadjet, symbolising Upper and Lower Egypt.

The pharaoh's dagger was forged from pure gold. On its sheath, lions, leopards and hunting dogs are depicted attacking deer and cattle.



puzzles. In 1968, an X-ray of the king's skull revealed that the mummified regent had a large hole in his head – as though he had been struck with force. There was nothing to suggest the king had been injured in war, so suddenly Tutankhamun's early death became one of the world's oldest murder mysteries.

Egyptologist Bob Brier theorised that the ageing Grand Vizier Ay, Tutankhamun's advisor, could have killed the king to take the throne himself.

Historians know that after Tut's death, Ay went to great lengths to cement his claim to the throne – despite his lack of royal blood. Ay's main rival was the army chief Horemheb, but the grand vizier secured the throne by acting while the commander was waging war against the Hittites, far from Thebes. In ancient Egypt, the heir to the throne was supposed to bury the old ruler, and by hastily burying Tutankhamun while Horemheb was absent, Ay emerged as the rightful heir. In 1323, he took power.

#### TUT HAD DISABILITY

In 2005, however, new research shattered Bob Brier's theory that the great vizier, in

his quest for the throne, had actually had the young Tutankhamun killed.

CT scans revealed that the blow to the head had only been inflicted on the child king after his death. The hole was probably made during the process of mummification, or perhaps when

Howard Carter's team of archaeologists examined the mummy behind the gold mask in the 1920s.

The CT scans also revealed a broken left leg, giving rise to a new theory about the young pharaoh's cause of death: the fractured bone had caused a deadly infection.

In an attempt to find the truth about Tutankhamun, Egypt's chief archaeologist, Dr Zahi Hawass, decided to subject the 3,300-year-old mummy to new, high-tech studies in 2008. Along with 15 other mummies, the child king's embalmed body was CT-scanned again and DNA-tested.

The laboratory work revealed some surprising insights about the young ruler and his family. The man behind the famous golden mask was not a handsome young king who'd lived fast and died young. Rather, the child king had been disabled

– a victim of generations of incest and inbreeding.

Before Dr Hawass's research, Tutankhamun's family background had been a mystery. Virtually nothing was known about his mother, and there were several plausible candidates for his paternity. Tutankhamun himself left inscriptions that could be interpreted as stating that the magnificent Amenhotep III was his father. But archaeologists have also found hieroglyphics in which Tut is referred to as the son of the heretic king Akhenaten. And they couldn't rule out the mysterious transitional pharaoh Smenkhkare either.

However, Dr Hawass's DNA analysis established with 99.99 percent certainty that Tutankhamun's father was the heretic king Akhenaten – but Tut's mother was not Akhenaten's powerful queen, Nefertiti. On the contrary, analysis of DNA from a previously unidentified female mummy showed that she was Tut's mother. And, interestingly, the woman had the same parents as Akhenaten, namely the powerful pharaoh Amenhotep III and his queen, Tiye. Tutankhamun was the product of a sibling relationship.

In ancient Egypt, it was very common for the king to have children with his sister >>>



# “Tutankhamun’s left foot had slowly crumbled”

Tutankhamun was often depicted with a stick – with good reason, modern research has shown. The inbred child king had a disability.

– the Egyptians believed this made the bloodline stronger and reinforced the royal family’s power. Tut’s own wife was also his half-sister – the daughter of Akhenaten and Queen Nefertiti. The young couple’s close family ties may have been the reason why they never conceived a baby that survived to inherit the throne from Tutankhamun.

The incestuous habits of the royal family were probably also the cause of the disease from which Hawass’s archaeologists surmised Tutankhamun suffered. The rare bone disorder Kohler’s disease must have caused the king great pain in his left foot, due to poor blood supply, and Tutankhamun’s foot had succumbed to bone necrosis. The condition explained both the broken left leg and the fact that Carter’s had archaeologists found no fewer than 130 walking sticks in Tutankhamun’s tomb during their excavations. The king would have needed them.

DNA analysis also showed that Tutankhamun suffered from malaria. The combination of the congenital bone disease, a malaria-suppressed immune system and infections from a fall that resulted in a broken leg may have caused the young king’s body to simply give up, Dr Hawass concluded.

However, German scholars who have closely studied Dr Hawass’s research findings do not fully agree with the Egyptian archaeologist’s conclusions. More likely, they say, Tutankhamun died of the hereditary disease sickle cell anaemia, which can also cause bone deformities like those found in Tutankhamun’s body.

The researchers believe that their theory is supported by the fact that Tutankhamun was conceived in an incestuous relationship. The risk of a child being born with sickle cell anaemia is multiplied if the parents are related.

## TOMB FILLED WITH RECYCLED GOODS

While Dr Hawass’s genetic studies have revealed Tutankhamun to be a disabled victim of his parents’ incest, other researchers have turned their attention to the funerary goods of the child king. These studies, too, have yielded surprising information. There are strong indications that most of Tutankhamun’s burial goods are not his own at all, but recycled from other royals.

Archaeologists have found several motifs on the sarcophagus that prove it

In recent years, scientific studies led by Dr Zahi Hawass have shed some light on the life and death of the child king.

was not Tutankhamun’s own. The young ruler’s sudden death and the Grand Vizier Ay’s rush to bury him meant there was no time to have special burial paraphernalia made. A new sarcophagus with ornamentation and inscriptions would take eight months to carve, so instead Ay had the sarcophagus of a predecessor of Tut – most likely Akhenaten – redecorated.

Probably not even Tutankhamun’s famous golden mask with blue stripes was made especially for him. British Egyptologist Nicholas Reeves has closely studied the mask and found that it consists of two parts: the face itself and the rest of the headgear. While the main part of the mask is made of 22.5 carat gold, the face is only made of 18.4 carat, and the mask bears traces of solder on the neck and forehead. Similarly, the mask’s blue decorations indicate that it was made in two stages – the blue stripes on the headgear are made of glass, while the blue features of the face are made of the stone lapis lazuli.

Finally, the death mask’s ears are pierced, suggesting that it was originally intended for a woman – most likely







Akhenaten's queen, Nefertiti, according to Reeves. The face part is simply glued to the rest of a mask that was actually intended for someone else.

In Reeves's opinion, Tutankhamun's tomb may have been used to dispose of anything pertaining to Akhenaten's reign. The British archaeologist estimates that more than 80 percent of Tutankhamun's treasures were in fact just hand-me-downs from other pharaohs – mainly Akhenaten and Nefertiti.

Reeves's theory is supported by the fact that subsequent pharaohs did everything in they could to erase any trace of Akhenaten, Nefertiti, Tutankhamun and anything else that might remind them of the heretical time when the sun god Aten was suddenly proclaimed to be Egypt's foremost god.

Horemheb succeeded Ay to the throne, and at the temple of Karnak in Thebes erected the Great Edict of Horemheb – a stela carved with a public decree to restore peace and order in the land. He banned the names Akhenaten, Nefertiti, Ay and, to some extent, Tutankhamun, and ordered their names to be erased from temples and

palaces. Horemheb died childless as the last pharaoh of the Eighteenth Dynasty, but the successors of Egypt's Nineteenth Dynasty went to even greater lengths to erase Tutankhamun from history – not least the famous pharaoh Ramesses the Great. In

this way, ironically, the pharaohs managed to preserve the secret of King Tut's tomb for posterity, so that the child king – a mere footnote in the mighty empire's thousands-year history – is today among its best-known rulers. ■

### ROSETTA STONE REVEALED EGYPTIANS' LANGUAGE

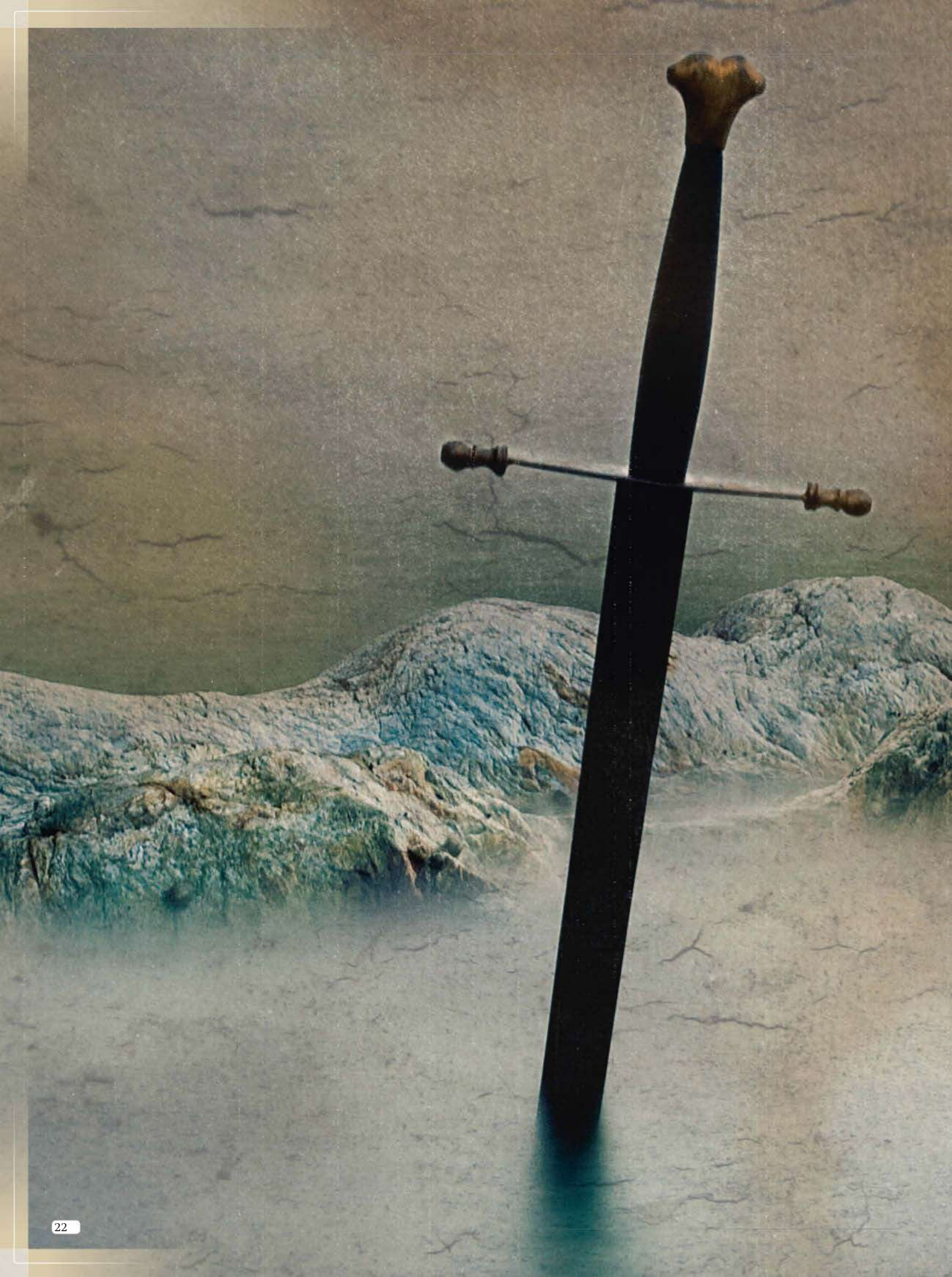
**D**uring the French Emperor Napoleon's failed attempt to invade Egypt in 1799, soldiers found a stone tablet inscribed with the same text in three languages: ancient Greek,

demotic Egyptian and Egyptian hieroglyphics. The Rosetta Stone – named after the site – finally enabled researchers to decode the Egyptians' enigmatic written language.

### KEY MOMENTS









# LEGEND OF KING ARTHUR

410-1998

Arthur, the legendary Celtic king, still confuses historians. He's not mentioned in any contemporary source, and there's plenty of evidence to suggest that stories of Arthur and his Knights of the Round Table are no more than fanciful tales for dark winter nights. But at the same time, the story is so deeply rooted into British culture that many doubt it could have appeared from nowhere. A good number of historians continue to search doggedly for traces of the legendary king.





## 410-1998

**410** Rome abandons Britannia, leaving it open to conquest.

**594** Arthur's name is first mentioned in a Welsh poem.



**1136** Geoffrey of Monmouth describes Arthur's life in *The History of the Kings of Britain*.



**1998** A stone with the inscription "Arthnou" is excavated.

410 >>> 594 >>> 1136 >>> 1998 >>>

**K**ing Arthur is one of history's most fabled characters. Legends describe him as a peerless warrior and chivalrous knight who united England and Wales around the year AD 500. But whether the legendary king actually existed is lost in a jumble of medieval bardic verse and chronicles. Instead, archaeologists and historians are forced to try to find concrete traces of Arthur in the places associated with him throughout history.

The Arthurian myth, in perhaps its best-known version, begins in a divided and troubled Britain, ruled by competing kings and warlords. To find a ruler worthy of uniting the Britons, the wizard Merlin creates a challenge: using his magical powers, he embeds a sword in a stone that only the country's true king will be able to pull out.

For years, many brave and noble knights attempt to pull the sword from the stone, but all are forced to give up. The sword is unyielding – until the day when a young boy named Arthur slides it out with ease. Everyone is astonished by the child whom fate has chosen to be king.

Later, according to the stories and legends, Arthur grows up to successfully unite Britain under his leadership. He becomes the greatest king ever to rule the land, gathering around him the noblest and bravest knights.

They meet around the fabled Round Table in Arthur's huge castle, Camelot, where they plan campaigns against the kingdom's enemies.

With his magical sword Excalibur in hand, the king defeats the

dreaded Saxons and all other invaders – and Arthur's reign becomes the happiest era in Britain's history.

Only a betrayal from within finally destroys the harmony: while Arthur wages a war of conquest in Gaul, his nephew (and bastard son in some versions of the legend) Mordred forms a treacherous alliance with the Saxons. Arthur rushes home, and in a decisive battle kills Mordred and saves Britain. But during the battle the king is mortally wounded, and the only way to heal his wounds is to journey to the mysterious island of Avalon. There, according to myth, the king waits for the time when Britain will need his help again.

#### AFTER THE ROMANS

While most people know about the myth, historians know very little about the real Arthur. Scholars begin their search in written accounts from around AD 500 onwards. What is known is that southern Britain at the time was ravaged by civil war and turmoil after the Romans gave up the province of

Britannia – modern-day England and Wales – in AD 410. The Romans had ruled Britain since 43 BC, but by the early fifth century AD, the Empire was crumbling, and the Romans abandoned their ill-fated northern province.

Columns of legionaries marched out of the country, and before long hostile Scots, Irish, Picts and – in particular – Saxons from what is now northern Germany poured across the borders in successive waves.

Archaeological evidence reveals that the Celtic Britons, who had governed Britain before the Roman occupation, fled from the cities into the

forests. Here they built fortifications to defend themselves against invading enemies. Several military fortifications were greatly expanded during the fifth and sixth centuries, and evidence reveals that the Saxon advance north and west paused from around the mid-sixth century. Their invasion had apparently been halted at the very time when – according to legend – King Arthur lived.

#### THE KING KILLED 960 SAXONS

One of the few contemporary accounts of the British battles against the Saxons comes from the works of the Celtic monk, Gildas. He writes about a decisive battle that finally stopped the invaders from North Germany. According to Gildas, the battle

took place in the early sixth century at Mount Badon. Gildas makes no specific mention of Arthur in his accounts, yet Badon is of interest to Arthurian historians because the early ninth-century work

Excalibur, Arthur's magical sword, protected the king from blood loss, according to legend.

*Historia Brittonum* – usually attributed to Welsh monk Nennius – links Arthur to Badon. The work portrayed Arthur as a warlord who, carrying an image of the Virgin Mary on his shoulders, led 12 great battles against the Saxons, almost single-handedly defeating the Britons' great pagan enemy. The *Historia* records that the last – and decisive – battle was at Badon, where Arthur felled 960 Saxons with his own sword.

Historians have long searched for the site of Badon and possible traces of the legendary king. So far, their search has been in vain, but they can conclude – from their knowledge of the Saxons' territorial spread – that the legendary hill must be somewhere in the south of England.

#### PRIEST INVENTED ARTHUR'S LIFE

The first coherent account of Arthur's life from birth to death was written some 600 years after the Battle of Badon in 1136, >>>

GEOFFREY OF MONMOUTH C.1105-1155

## THE MAN BEHIND THE LEGEND

■ Welsh cleric Geoffrey of Monmouth completed his masterpiece, *The History of the Kings of Britain*, in 1136. The book depicts as many as 75 mainly fictional kings from England's early history and is the main source for all later fables about King Arthur. Geoffrey wanted to create a grand narrative of the British past that

would unite the people together, so made no mention of the Roman occupation in his book, while Arthur is portrayed as the greatest hero of all time. Geoffrey worked as a priest and probably also taught in Oxford between 1129 and 1151. He was later consecrated Bishop of St Asaph in Wales.

Lecturer at Oxford – Priest – Historian





*Arthur's trusted knight, Sir Lancelot, excelled in war, but his affair with Guinevere destroyed the unity of the Round Table.*





## THE KNIGHTS OF THE ROUND TABLE

According to legend, King Arthur regularly gathered his knights around the Round Table at his castle in Camelot. Their number varies from 12 to several hundred, depending on the legend, but several appear in all stories.



when the cleric Geoffrey of Monmouth wrote his book *The History of the Kings of Britain*. It was to serve as the inspiration for all future accounts of Arthur – and triggered medieval England's hero-worship of the legendary king.

Although *The History of the Kings of Britain* is no longer considered of historical value, Geoffrey's tales of the kings is still considered a literary masterpiece – and the book was one of the most popular of the Middle Ages.

### WAS ARTHUR A ROMAN?

Today, everyone agrees that Geoffrey's accounts are wildly exaggerated, but the idea that Arthur was a historical person remains possible. Britain in the fifth century was divided into a number of smaller kingdoms, and it's not implausible that a single leader acted to unite the kingdoms in their fight against

external threats. According to several Welsh historians who have reinterpreted ancient writings about Arthur, the real king may have been a powerful local warlord or king chosen to lead the Celts against the invaders.

Other historians believe that Arthur was a Roman who chose to fight on the side of the locals against the invading Saxons. It's been suggested the real Arthur was Roman commander Lucius Artorius Castus, but since he lived many hundreds of years earlier than the period associated with the legendary

king, the theory is largely dismissed. More plausibly, the real Arthur might have been the Romano-British commander Riothamus, who was active around the year 470 – the same time that Arthur, according to the old tales, beat back the Saxons. The

proponents of the Riothamus theory point out that the Roman commander can theoretically be linked to several of the battles and places where Arthur appears in the legends.

### HISTORIANS HUNT FOR CAMELOT

There are still no conclusive findings to establish whether Arthur was a Celtic warrior, a Roman hero or just pure fantasy. The search for definitive proof is further complicated by the fact that the Arthurian legends are relatively vague in their descriptions of specific locations – which is why no fewer than 160 different places across Europe have been able to claim a connection with Arthur. Locals assert the king was in places as far apart as Scotland and Sicily, where ancient – probably Norman – legends claim the mighty warrior lies sleeping inside the volcano Etna.

Although these stories are linked to places all over Europe, modern archaeologists and historians focus their search for the truth within the British Isles, and in particular the south and west of mainland Britain. Here they hope to find the real-life version of the legendary Camelot, where Arthur gathered his knights around the Round Table.

In the 1960s, British archaeologists carried out a series of excavations at a hill fort in Cadbury in Somerset, in the south-west of England. They discovered that the castle had been heavily reinforced after the Roman retreat. The walls were extended to almost five metres thick and the site covered over 18 hectares, making it larger than other known defences from the same period. Archaeologists also found traces of a magnificent dining hall within

"It's not implausible that a single leader acted to unite the kingdoms in their fight against external threats."

#### TECHNOLOGY

#### CULTURE

#### ECONOMY

#### EVERYDAY



### Arthur is a movie hit

The legend of King Arthur was first made into a film back in 1904, and filmmakers have been delivering grand tales of the legendary king ever since. Arthur's mighty battles are the main focus of the films, but the brave

knights' quest for the Holy Grail has also been depicted for cinema audiences: Indiana Jones hunted for the mysterious chalice in *The Last Crusade*, as did Monty Python's coconut-clopping knights (pictured, left).





#### **LANCELOT** ▲ Traitor

■ Lancelot was Arthur's sword-wielding iron fist in battles against the Saxons, and the fierce knight often excelled in tournaments. Legend has it that Lancelot and Arthur's beautiful wife Guinevere were secretly in love

for a long time. Eventually, the two lovers gave into their feelings and embarked on a torrid love affair. When Arthur discovered the deception, he ordered his wife executed, but Lancelot came to her rescue. The incident shattered the unity of Arthur's court – Lancelot ended his days in shame as a hermit, while Guinevere locked herself up inside a convent.

#### **GALAHAD**

##### **The Chosen One**

■ Galahad first appeared in later myths, where he was introduced as Lancelot's son. His primary virtue was chastity and Arthur judged that only Galahad was pure enough to seek out and find the Holy



Grail. Galahad duly found the Grail on the mysterious island of Sarras, where he was given the Grail's secrets.

#### **PERCIVAL**

##### **The Naive**

■ Before Galahad's entrance into the legend, Percival played the role of the knight who found the Holy Grail. In later stories, he's presented as young and naive, making a series

of critical errors in his attempt to find the Grail, forcing him to abandon the quest in frustration.

#### **KAY**

##### **The Monster Slayer**

■ Kay was depicted as a brave knight with supernatural powers – for example, he could hold his breath underwater for nine days. Arthur's fearless companion helped the king defeat many enemies, including a giant on Mont-Saint-Michel in Brittany. Later, Kay developed into a troubled knight who tormented all newcomers to the Round Table.

#### **GAWAIN**

##### **The Sun God**

■ Gawain was one of Arthur's most powerful

knights, and often appeared in medieval English tales as the most prominent of the knights. His strength was linked to the sun, so increased until noon, after which it would slowly ebb away.

#### **TRISTAN**

##### **Doomed Lover**

■ Originally not part of the Arthurian tales, Tristan is best known for his affair with Iseult, in which the two young lovers drank a potion that bound them eternally in love, even though Iseult was to marry Tristan's uncle, King Mark of Cornwall. Later poets also drew Tristan into Arthur's circle, where he stood out among the knights as a noted falconer, as well as a harpist and chess player.

## “ Locals assert that King Arthur was in places as far apart as Scotland and Sicily ”

the castle and shards of valuable Mediterranean pottery. The finds have led archaeologists to conclude that a noble court was based at Cadbury at the same time as Arthur reputedly lived – although they stop short of concluding that Cadbury was definitely the home of Camelot.

Another possible site for Camelot is the castle of Tintagel, first mentioned by Geoffrey of Monmouth. According to the priest, Arthur was both conceived and probably born in the castle on Cornwall's north coast. Built by Duke Richard of Cornwall in 1233, Tintagel – now a ruin – is around 700 years too young to be linked with Arthur. Yet the site has repeatedly been the target of archaeological digs, and in 1998 a team of Scottish archaeologists carried out further excavations at the site. They found traces of an even older

settlement beneath the ruins, and also uncovered pottery shards imported from the Mediterranean dating back to the fifth century. The finds suggest that an earlier site at Tintagel served as a hub of trade and social life in Arthur's time.

A team of archaeologists from the University of Glasgow also found a mysterious slate slab buried under several layers of soil. On the slab is an ancient inscription in Latin mixed with some

primitive elements of Irish and British: “Arthnou, father of a descendant of Coll, has had this made.”

They quickly dated the remarkable find to the fifth or sixth century AD, and the slate slab immediately attracted plenty of media attention, which speculated that the scholars had finally found traces of the historical Arthur in a place that could have housed the legendary king's mighty Camelot and his brave knights.

However, the team subsequently made a

Archaeologists have gone hunting for Arthur's Camelot beneath the ruins at Tintagel.



“On top of the coffin was a lead cross with the inscription: ‘Here lies interred the famous King Arthur’”

>>> point of stressing that the Celtic Arthnou does not translate into the English Arthur. In fact, the Celtic syllable *Arth* – meaning ‘bear’ – appears in a number of names that also do not translate to Arthur.

Although archaeologists and historians have searched hard for traces of Camelot, the hunt has so far been unsuccessful. Possibly because Camelot was never a physical place. Indeed, reputable scholars believe that Camelot could simply be a name for Arthur’s court – his personal capital, which would have moved around the kingdom like that of later medieval kings. The arrangement ensured that all of post-Roman Britain’s smaller kingdoms could meet with Arthur, the high king, as a way of arbitrating disputes and preventing possible conflict.

#### KNIGHTS CHASED THE GRAIL

Many medieval tales of Arthur link the mythical king to the legend of the Holy Grail, from which Christ and his disciples drank during the Last Supper, and which

Joseph of Arimathea later used to collect Christ’s blood as he hung from the cross.

In some medieval Arthurian tales, the Grail revealed itself to the king and his knights in mystical fashion as they gathered around the Round Table. Spurred on by the magnificent apparition, Arthur sent his faithful knights on a quest across Europe to find the sacred chalice. Depending on who wrote the story, several actually succeeded, including the pure knight Galahad.

For centuries, hopeful treasure hunters have tried to follow in the knights’ footsteps, but so far without success. The Christian tale of Joseph of Arimathea tells how Joseph’s family and followers, Grail in hand, founded Britain’s first Christian church at Glastonbury, making the small Somerset town a favourite destination for Grail hunters.

A number of tales also place the Grail on Avalon – the island where, according to legend, Arthur travelled after being mortally wounded in battle with Mordred. The many sources citing Glastonbury and Avalon respectively as the Grail’s hiding place have gradually led a number of scholars to pinpoint Glastonbury as the site of Avalon.

#### MONKS FOUND ARTHUR’S TOMB

The hypothesis is supported by the fact that a huge hill – Glastonbury Tor – rises high to the east of the town. The hill was once surrounded by water and several historians believe it may have been the site of the mythical island. This theory relies heavily on a local legend about a Breton bard who, in the twelfth century, revealed the secret of Arthur’s final resting place, which until then had been kept hidden. The bard said that Arthur was buried in Glastonbury. According to historians, the abbot of

160

sites across Europe claim links to King Arthur through local folklore.

*Historians have identified the hilltop of Glastonbury Tor as the island of Avalon, where Arthur (lying on the right) disappeared.*







Glastonbury Abbey was so convinced by this claim that he decided to search for Arthur in the abbey's sacred grounds.

In 1191, he ordered his monks to dig for the remains of the king in the monastery's cemetery – with apparent success. Five metres below ground, the monks' digging tools struck a simple coffin made from a hollowed-out tree trunk. On top of the coffin was a lead cross with an ancient inscription: "Here lies interred the famous King Arthur on the Isle of Avalon." When the monks lifted the lid of the coffin, they saw the

skeleton of a tall man. Next to it lay some smaller bones and a blonde tress of hair, which they inferred to be the remains of Guinevere, Arthur's beautiful queen.

The find attracted medieval visitors to the monastery to see the remains of Arthur, but today few historians believe there was much truth to the monks' claims. The monastery had burned down some years before the find and was in dire need of money to rebuild. The abbot may well have spied an opportunity to attract more visitors – and therefore alms – by claiming that the monks had finally found King Arthur's tomb.

The tomb itself was later covered over, probably to protect it from robbers. Unfortunately, the important cross with the inscription also disappeared without trace at some unknown point in time. Today, nothing exists but a drawing of the cross's inscription. It was first published in 1607 – some 400 years after the monks claimed to have found Arthur's tomb.

Although all traces of Arthur's coffin have vanished, modern archaeological excavations have confirmed that the monks did indeed dig in the cemetery in 1191, as well as finding evidence of an ancient tomb. But what the tomb contained exactly remains a mystery.

#### THE LEGEND LIVES ON

Despite the many attempts to prove Arthur's existence through the ages, even the most ardent proponents of the legendary king's existence today admit that the evidence remains virtually non-existent. No definite proof that a historical Arthur existed has ever surfaced.

Yet some historians insist that the myth is too detailed and widespread not to be rooted in some form of reality – and so the search for Arthur continues among the ancient books and ruins that have been associated with the most legendary British king of all time.

Meanwhile, the fascination with Arthur, his brave knights and the quest for the Holy Grail lives on. Today, it flourishes not only in medieval chronicles, but also in modern Hollywood films, where the legendary king takes the leading role with his magical sword Excalibur in hand to defeat the kingdom's enemies. And so Arthur – real or invented – is immortalised forever. ■







# SEARCH FOR ATLANTIS

355 BC–Today

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Eleven thousand years ago, Atlantis was the most magnificent kingdom in the world. But one catastrophic day, the island was hit by a tsunami and swallowed by the sea for ever. So wrote the ancient Greek philosopher Plato. His extremely detailed records of Atlantis have convinced scholars for centuries that the kingdom really existed. And for more than two thousand years, everyone from dedicated archaeologists to Nazi Germany's eugenicists have searched for evidence of the lost realm.





## 355 BC–Today

**355 BC** Plato describes the glorious realm of Atlantis for the first time.

**AD 1869** Atlantis appears in *Twenty Thousand Leagues Under the Sea*.



**1900** Arthur Evans excavates Minoan Knossos.



**1968** An undersea stone road at Bimini is claimed to be evidence of Atlantis.

A kingdom where branches burst with tasty fruit and the scent of wildflowers hung over the lush landscape. An island whose ground abounded with gold and precious stones to adorn the homes and magnificent temples of its inhabitants. A sun-drenched land where farmers knew no drought and could harvest their wholesome crops several times a year. It sounds almost too good to be true, but the ancient Greek philosopher Plato (427–347 BC) nevertheless insisted that his descriptions of the lost realm of Atlantis were true. And since then, adventurers everywhere have taken him at his word.

Atlantis has been the subject of speculation and the goal of expeditions for more than two millennia. Although academics have yet to prove the kingdom's existence, the search continues for the mythical land that – according to legend – was struck by a tsunami and swallowed by the sea in just one disastrous day.

### MYTH CAME FROM EGYPT

The story of Atlantis begins in Plato's dialogues *Timaeus* and *Critias*, from about 355 BC. Here, the Greek philosopher tells the story of Solon, a Greek who, while travelling in Egypt, heard about Atlantis from priests in the town of Sais, near the mouth of the Nile. According to Solon, 11,000 years ago there was an empire as large as North Africa and Asia Minor combined, off the "Pillars of Hercules" – interpreted as the Strait of Gibraltar. Atlantis was the kingdom of the sea god Poseidon, which he divided between his ten

sons. The eldest, Atlas, was given the title of King of Kings and ruled from the highest place on Atlantis – a city in the middle of the kingdom that Poseidon had built to protect his mistress, Cleito.

In his text, Plato paints a picture of an affluent society, where humans and wild animals lived in harmony with each other, so that no one had anything to fear, and which produced "the wisest men". The philosopher describes the layout of the landscape and the city's architecture in great detail. Not least the kingdom's central island, which surpassed anything the world had seen. It was surrounded – according to Plato – by walls of brass, tin and the metal orichalcum, which "flashed with ... red light". In the middle of the island sat the temple of Poseidon, protected by a wall of gold. Plato tells how the kings, who ruled the kingdom for generations, "continued to ornament in successive generations, every king surpassing the one who went before him to the utmost of his power, until they made the building a marvel to behold for size and for beauty".

Although the empire existed for many years without going to war, its fleet could muster 1,200 battle-ready ships that, together with an army of over a million men, made Atlantis the most formidable power of its time on both land and sea.

### GODS PUNISHED PRIDE

As the divinity of the Atlanteans faded "and became diluted too often and too much with the mortal admixture", human nature took over. As in the stories of Noah's Ark from the Bible, the Atlanteans were corrupted, no longer satisfied with the riches the land offered. Plato writes that



In 1975, during the Caspian Atlantis expedition, divers found amphorae and brightly coloured pottery in the Caspian Sea off Azerbaijan.

Atlantis gathered its armies to crush Athens. Not only did the Athenians wipe out the Atlanteans' army, but their pride aroused the anger of the gods, who decided to punish the formerly glorious kingdom.

"[A]fterwards there occurred violent earthquakes and floods; and in a single day and night of misfortune all [the Atlanteans'] warlike men in a body sank into the earth, and the island of Atlantis in like manner disappeared in the depths of the sea," reads Plato's gloomy account, which left Atlantis as a sea of mud:

"For which reason the sea in those parts is impassable and impenetrable, because there's a shoal of mud in the way; and this was caused by the subsidence of the island."

### PLATO: "THOUGH STRANGE, IS TRUE"

In his dialogues *Timaeus* and *Critias*, Plato stresses that although the story of Atlantis might have sounded strange, it was true, nonetheless. A statement that has since provoked much debate. Even in Plato's time, sceptics pointed out that he confused the destruction of Atlantis with other natural disasters, such as the earthquakes that destroyed parts of the island of Atlantis near Athens in 426 BC and the Greek city of Helike in 373 BC. Or that the Greek philosopher was trying to describe the

SPYRIDON MARINATOS 1901-1974

## EXCAVATED MINOAN EMPIRE

■ Greek archaeologist Spyridon Marinatos was appointed director of the Heraklion Museum in Crete in 1929. There he began searching for traces of the island's Minoan culture. After just three years, Marinatos struck archaeological gold when he came across the ruins of a two-storey villa decorated with frescoes. The building turned out to be part of the 2,000-year-old Minoan port city of Amnisos. Marinatos continued his search on the

island of Santorini, which had been hit by a gigantic volcanic eruption in the sixteenth century BC. Under the layers of lava and ash, he found traces of another highly developed Minoan society and concluded that the Minoan empire had suddenly collapsed after a natural disaster. The fate of the Minoans was quickly linked to the myth of Atlantis. Marinatos's excavations continued until he died of a heart attack in 1974.

Museum director – Greek archaeologist – Excavated Santorini





perfect society with his story, as he had done in his earlier writing on the state. Even Plato's own pupil, the famous philosopher Aristotle, believed that the story of the lost island was invented purely for literary reasons.

However, the legend of Atlantis quickly gained followers, who explored the possibilities of how to find the glorious kingdom. The Greek philosopher Crantor, a student of Plato's, who wrote commentaries on his master's works, set off for Egypt and found columns of hieroglyphics that corroborated Solon's tale. At least, that's what Atlantis enthusiast, the Roman Proclus, tells us.

In the second century AD, the learned Roman Aelian also mentioned the mighty empire, which he estimated was located off the coast of Spain.

#### LEGEND SPREAD

The myth of Atlantis lived on in writings, oral histories and people's imaginations through the Middle Ages. And even when Columbus crossed the Atlantic and reached the New World in 1492, the land across the sea was supposed to be the island Plato had spoken of, or so Spanish historian Francisco López de Gómara thought in 1553. However, Atlantis hunters were also full of other creative ideas about where to find the kingdom. In 1675, for example, Swedish scientist and author Olaus Rudbeck was convinced that the lost kingdom was in Sweden.

However, the hunt really began in the nineteenth century, when interest in ancient treasures found in writings as well as in excavations flared up among eager Romantic

archaeologists and scholars.

In 1882, the American politician and author Ignatius Donnelly published *Atlantis: The Antediluvian World*.

The book was a kind of manifesto, arguing that all of Plato's descriptions of Atlantis were true, proclaiming: "A single engraved tablet dredged up from Plato's island would be worth more to science, would more strike the imagination of mankind, than all the gold of Peru, all the monuments of Egypt, and all the terracotta fragments gathered from the great libraries of Chaldea."

Around the same time, the story also spread to the adventure novels of popular literature. In Jules Verne's 1869 classic *Twenty Thousand Leagues Under the Sea*, the submarine captain Nemo shows his guest Aronax the remains of the lost kingdom at the bottom of the sea.

Today, academics still wonder why the story of Atlantis stands

Plato was the first to write about the legendary kingdom of Atlantis in 355 BC.



out from Plato's other works; it contains no attempt to unravel philosophical concepts, and the civilisation he describes cannot be compared to the state ideals he had previously put forward. At the same time, they point out that parts of

Plato's story are demonstrably true. For example, we know that the Greek Solon, whom Plato writes about, lived from 640 to 559 BC, and ancient sources suggest that he did indeed travel in Egypt.

#### MAYA PEOPLES WROTE ABOUT FLOODS

The Atlantis story is almost identical to a number of other flood myths that may have originated after a gigantic tidal wave hit the Mediterranean. The earliest known flood legend

comes from Mesopotamia, modern-day Iraq, and tells how the gods decided to flood the world and drown all humans. One of the gods had a change of heart and warned King Utnapishtim to build a lifeboat. The story is unmistakably similar to that of Noah's Ark, when God sent a flood over the earth. Only Noah, his family and a herd of animals taken from all around the world were saved in the ark, and when the water receded, the boat was stranded atop Mount Ararat. In a Greek flood tale, Deucalion built a ship and filled it with animals, in the same way Noah did.

According to Indian mythology, Manu, the first man, was the only one to survive a flood after being warned by a fish, and he went on to become the ancestor of all later generations. Even the Maya mythology *Popol Vuh* – *Book of the People* – tells of floods that wiped out a failed human race because it didn't worship the gods properly.

The recurrence of flood myths in so many cultures is seen by academics as a sign that Plato's Atlantis may be rooted in a common historical flood that ravaged the globe thousands of years ago.

In search of archaeological evidence, historians have therefore been looking for signs of a huge prehistoric flood, but

*Minoan culture flourished in Crete and elsewhere for over a thousand years. The demise of their highly developed empire may have inspired the legend of Atlantis.*

## OTHER LOST KINGDOMS

*Atlantis is not the only legendary kingdom that has inspired a search. Hopeful adventurers have sought utopian islands everywhere from Thule in the north to Madagascar in the south.*



#### HYPERBOREA

##### Three-metre-high inhabitants

■ The Greek Herodotus, among others, wrote of Hyperborea – a perfect place on earth with 24-hour sunlight, where a mythical people lived a life without war or toil. The peaceful inhabitants were well fed and grew to three metres tall. *Borea* was Greek for "north wind", and the name Hyperborea referred to the fact that the kingdom lay further north than the source of the north wind. Historians have suggested that Herodotus was inspired by the tall people of Scandinavia. Others postulate that Hyperborea was in present-day Siberia, as Herodotus placed the country in north-east Asia in his tales.

*The kingdom was depicted north of the Arctic Circle around 1600.*



so far without success. US academics, however, have estimated that the myths all originated in the sixth millennium BC, shortly after the Mediterranean broke through to the Black Sea and created the present-day Bosphorus. The event would have caused huge amounts of seawater to wash into the Black Sea, submerging vast areas of land.

### WEALTHY GERMAN FOUND TROY

In 1871, the wealthy German Heinrich Schliemann proved that myths sometimes have a basis in reality. Just as many sceptics were convinced that Atlantis existed only in Plato's imagination, most scholars of Schliemann's day agreed that the legendary fortified city of Troy, mentioned by Homer in the *Odyssey*, was a myth.

But in 1871, Heinrich Schliemann stuck his shovel into the soil of Anatolia to prove that Homer had spoken the truth. With little experience, he began uncovering ruins on the ridge of Hisarlik, whose ramparts matched descriptions in the *Odyssey*, and soon revealed an entire city much like Troy. In particular, a layer of the ruins that had been destroyed by fire corresponded, according to Schliemann, to the descriptions in Homer's narrative. The sceptics were deeply surprised but had to agree that Schliemann had found the lost Troy.

The discovery was grist to the Atlantis believers' mill. Because Troy had been proven to be real, the sunken Atlantis could be out there somewhere, too.

### GIANT KINGDOM IN CRETE

Seven years later, in 1878, Greek businessman Minos Kalokairinos came across a collection of ruins on the outskirts of the town of Heraklion in Crete, but it would be two decades before British

#### TECHNOLOGY.....

#### CULTURE.....

#### ECONOMY.....

#### DAILY LIFE.....

## Carbon-14 shot theory down

Plato tells us that Atlantis disappeared into the sea, so Atlantis hunters have been scouring the seabed for traces of the empire. In 1968, a diver claimed to have found the fabled kingdom when he came across a mysterious rocky road in the sea off the island of Bimini between

Florida and the Bahamas. US scientist Eugene Shinn had to disappoint the finder, however, when he concluded by carbon-14 testing the seashells in the stones that they had found their way to the seabed between 1200 and 300 BC, far later than Plato dates the demise of Atlantis.



archaeologist Sir Arthur Evans finally raised enough funds to begin excavations. Shovel after shovel, he uncovered traces of a powerful and highly developed Bronze Age civilisation named after the legendary King Minos. Slowly, Evans's team of archaeologists uncovered the political and religious stronghold of King Minos: Knossos – a gigantic structure containing multi-storey temples, 1,300 rooms linked by labyrinthine corridors, a wine press and granaries. Evans also found a facility that supplied the city with water, advanced sewers, and plazas where both men and women played sports.

It soon became clear that the Minoans had been a flourishing civilisation with their own written language, which even today cannot be deciphered. Archaeologists uncovered murals illustrating how Minoan revellers feasted, drank wine and worshipped their patron god, Poseidon. The discovery also revealed that the Minoans had ruled much of the Mediterranean and traded heavily

with the Egyptians to the south, before the society suddenly collapsed around 1500 BC.

The excavation of Knossos prompted British professor of ancient history KT Frost to claim that the demise of the Minoan civilisation had inspired Plato's tale of Atlantis. The Minoans had been so rich and had disappeared so suddenly that the story was consistent with the Atlantis myth. One of Frost's strongest arguments was that the descriptions of Atlantis should be seen through Egyptian eyes. From the Nile delta, Crete lies far to the west – a fact that fits well with Plato's descriptions of Atlantis's location to the west. At Knossos, as on Atlantis, there were magnificently decorated temples and palaces, and historians also know from ancient sources that Minoan trade with the Egyptians abruptly stopped around 1500 BC.

### VOLCANIC ERUPTION BURIED ISLAND

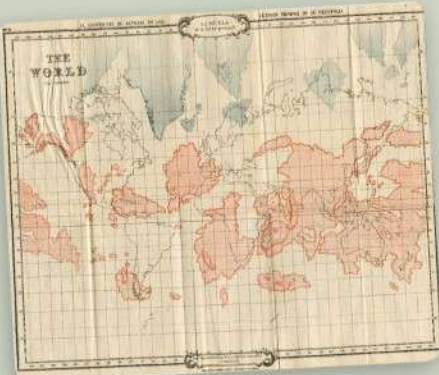
The discovery of Knossos led twentieth-century academics to hypothesise that the kingdom of Atlantis could have actually been the Minoan civilisation of Crete. The theory is still widespread, but the reason

"A single engraved tablet ... from Plato's island would be worth more to science ... than ... all the monuments of Egypt."

### LEMURIA

#### Gigantic kingdom

■ In the nineteenth century, academics discovered that lemurs were found in India, Madagascar and the African continent. The discovery was the seed for the theory of one great connected empire, which German Heinrich Hückel said was the cradle of humanity.



### THE LAND OF THE MIDNIGHT SUN

■ In 300 BC, the Greek explorer Pytheas described the island of Thule, in an ice-covered sea to the north. Like Hyperborea, the midnight sun rules the island, which is lush and fertile. The story became so popular that medieval cartographers drew Thule on nautical charts. Pytheas's Thule may have been inspired by Iceland or Greenland.

### MU

#### Sank in the sea

■ The legend of the giant Pacific kingdom of Mu was born in 1864, when French priest Brasseur de Bourbourg picked it up from ancient Mayan writings. The story goes that Mu sank into the sea after a rivalry between two brothers over the kingdom's queen. Some scholars have equated Mu with Lemuria.

Inscriptions on Mayan pottery tell of Mu.

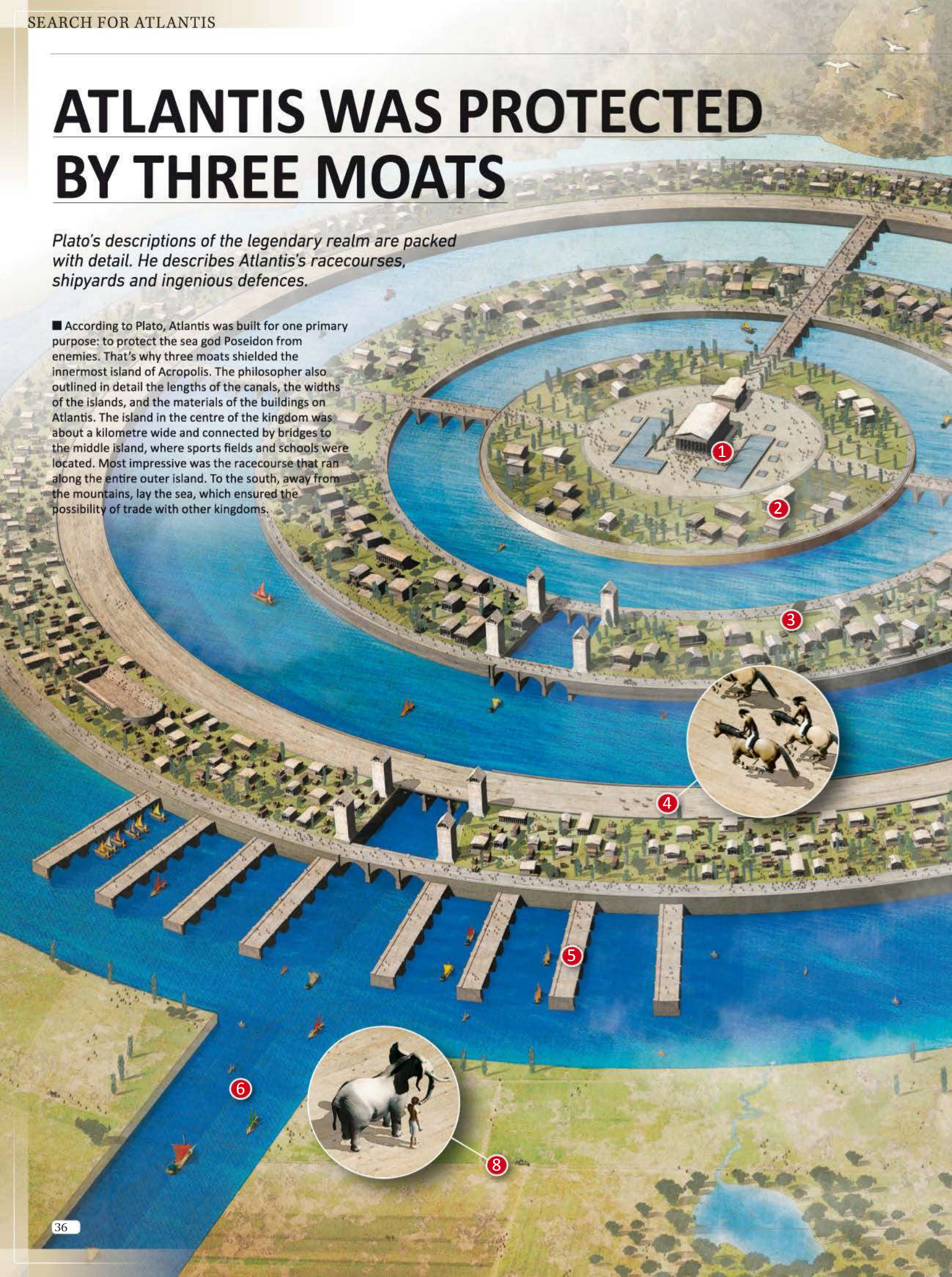




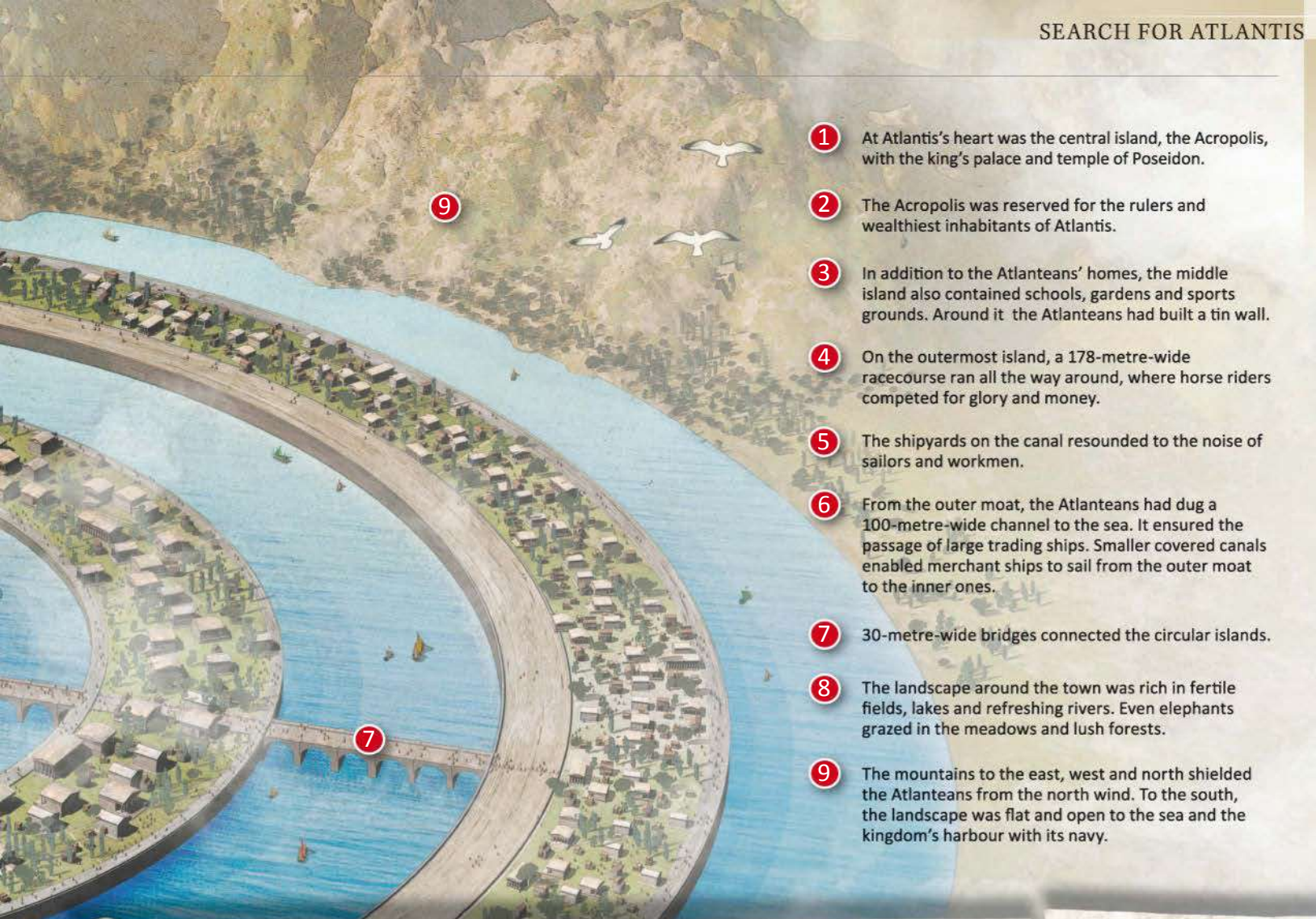
# ATLANTIS WAS PROTECTED BY THREE MOATS

*Plato's descriptions of the legendary realm are packed with detail. He describes Atlantis's racecourses, shipyards and ingenious defences.*

■ According to Plato, Atlantis was built for one primary purpose: to protect the sea god Poseidon from enemies. That's why three moats shielded the innermost island of Acropolis. The philosopher also outlined in detail the lengths of the canals, the widths of the islands, and the materials of the buildings on Atlantis. The island in the centre of the kingdom was about a kilometre wide and connected by bridges to the middle island, where sports fields and schools were located. Most impressive was the racecourse that ran along the entire outer island. To the south, away from the mountains, lay the sea, which ensured the possibility of trade with other kingdoms.







- 1 At Atlantis's heart was the central island, the Acropolis, with the king's palace and temple of Poseidon.
- 2 The Acropolis was reserved for the rulers and wealthiest inhabitants of Atlantis.
- 3 In addition to the Atlanteans' homes, the middle island also contained schools, gardens and sports grounds. Around it the Atlanteans had built a tin wall.
- 4 On the outermost island, a 178-metre-wide racecourse ran all the way around, where horse riders competed for glory and money.
- 5 The shipyards on the canal resounded to the noise of sailors and workmen.
- 6 From the outer moat, the Atlanteans had dug a 100-metre-wide channel to the sea. It ensured the passage of large trading ships. Smaller covered canals enabled merchant ships to sail from the outer moat to the inner ones.
- 7 30-metre-wide bridges connected the circular islands.
- 8 The landscape around the town was rich in fertile fields, lakes and refreshing rivers. Even elephants grazed in the meadows and lush forests.
- 9 The mountains to the east, west and north shielded the Atlanteans from the north wind. To the south, the landscape was flat and open to the sea and the kingdom's harbour with its navy.

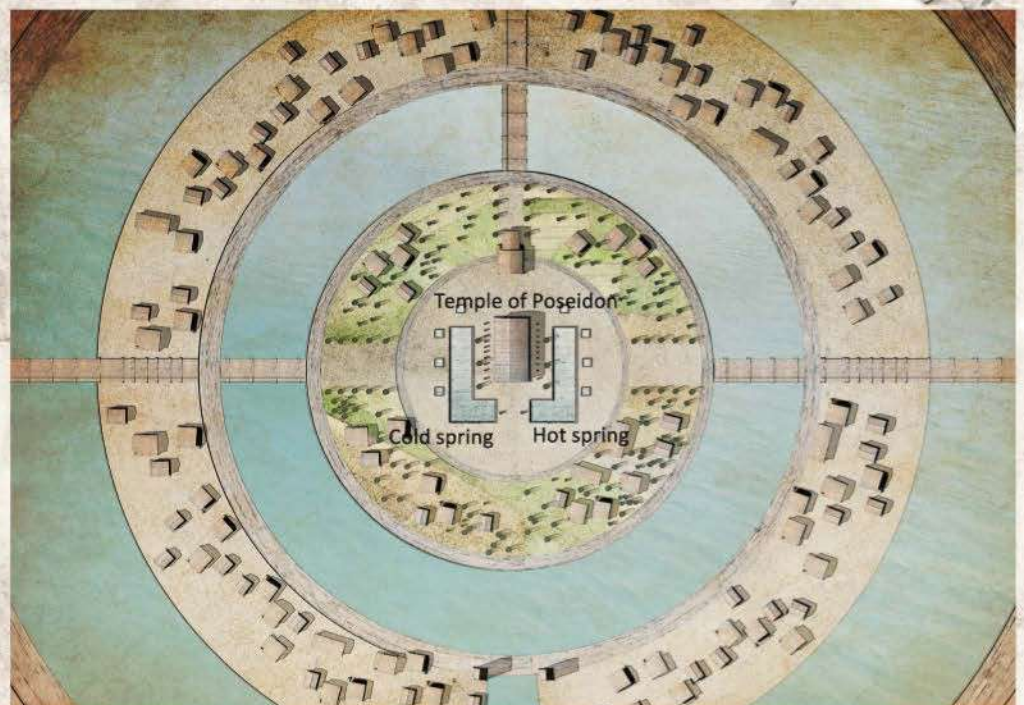


The Greek sea god Poseidon built Atlantis for his mistress. The canals were to protect against enemies.

## 178-metre-long temple was plated with silver

■ Atlantis's Temple of Poseidon towered over the city from the innermost island. Plato tells us that the temple, 178 metres long and 100 metres wide, was surrounded by a wall of gold. The temple's masonry and columns were covered with silver, except for the

pediment, which was adorned with gold. Its interior walls were carved from ivory and decorated with gold and orichalcum, which sparkled like fire. A golden statue of Poseidon on a six-winged horse reached to the ceiling, surrounded by 100 sea nymphs on dolphins.



The springs on the central island supplied both cold and hot water for the city's baths – segregated for royalty, women, men and domestic animals.



> why the Minoan culture suddenly perished had long since been lost. So, young Greek archaeologist and museum director Spyridon Marinatos began combing Crete for evidence.

After a long search, which he almost abandoned, he spotted a mural just visible in the ground on the north coast of Crete one day in 1932. Excited, he dug deeper and made a discovery that would prove decisive in the search for Atlantis. Marinatos had found a royal villa and was soon excavating an entire Minoan port city: Amnisos. One building in particular was interesting, because its cellar was filled with pumice, a sign that the area – and Knossos – had been hit by a huge volcanic eruption that had covered the city in lava and ash.

#### ASH BLEW ALL THE WAY TO CHINA

Today, archaeologists know that a giant earthquake did hit the Mediterranean region between 1650 and 1550 BC.

The tremors also triggered devastating tsunamis – some historians say as high as 100 metres – which swept across the Mediterranean, its islands and their terrified inhabitants, who were unable to escape. The eruption took place on the Greek island of Santorini, and the ruins of the island's ancient cities lie buried under up to 60 metres of volcanic ash. The layers of ash on Crete are up to 77 centimetres deep and testify to the size of the huge volcanic eruption that sent clouds of ash across large parts of the Mediterranean. The weight of the ash collapsed buildings and damaged agriculture for years.

As far away as the US and China, scientists have found evidence of the sixteenth-century-BC ash cloud in tree rings. By comparison, academics know that the 1883 volcanic eruption of Krakatoa between Java and Sumatra created 30-metre tsunamis that washed away 300 villages. Calculations show that the Santorini eruption was four times more violent than Krakatoa. The explosion and subsequent tsunamis left Knossos – and

perhaps Atlantis – in ruins. The mud, which according to Plato's tale "made the sea in those parts ... impassable and impenetrable", could have been banks of volcanic pumice from the eruption.

#### NUMERICAL ERROR

Although the archaeological evidence in Crete and Santorini is stronger than anywhere else in the world, sceptics quickly found holes in the theory. According to Plato, Atlantis

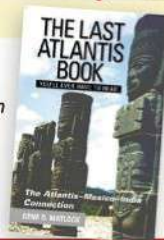
## ADVENTURERS HAVE SOUGHT ATLANTIS AROUND THE WORLD

*Literati, geologists, archaeologists and treasure seekers have delved deep into ancient writings and the ocean floor; they have climbed the world's highest peaks and crossed mountains of ice. All to find the ruins of the magnificent empire from Plato's tale. For more than two thousand years, adventurers have put their mark on the world map, but no one has yet found conclusive evidence of Atlantis.*

### NORTH AMERICA

#### MEXICO

■ **Indian connection:** Author Gene Matlock points to Mexico, which according to his theory was once connected to India. Part of the empire was called *Atlán* in Sanskrit.



#### SPAIN

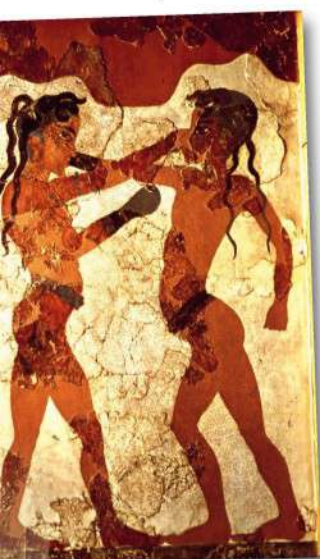
■ **Marshlands:** Satellite photos of marshes near Cádiz, Spain, reveal traces of an ancient society whose ring shape resembled Atlantis. Academics believe a tsunami devastated the area.



#### CUBA

■ **From Spain to the Americas:** The description of Atlantis as lying off the "Pillars of Hercules" has turned many scholars' eyes to the islands of the Atlantic. Candidates have included the Canaries, the Azores and even Cuba – mainly because the island lies in shallow waters.

### SOUTH AMERICA



Like the Greeks, the Minoans held major sporting events.

sank along with all its people and animals in a single terrifying day. But Crete remained above sea level and Knossos was rebuilt – by Greek conquerors. Plato also placed the legendary kingdom off Gibraltar, not in the Mediterranean, where Crete lies.

The dating was wrong, too, because while Santorini erupted in the sixteenth century BC, Plato said that the Atlanteans lived nine thousand years ago. However, this discrepancy can be explained by a numerical error in the translation from Egyptian to Greek. Both the Egyptians and the Greeks used the decimal system, but Solon's translation slipped one too many zeros on the Greek numbers above 100. This meant that Atlantis had sunk 900 years and not 9,000 years before Plato

wrote *Critias* and *Timaeus*. This adjustment gives a date of around 1250 BC – closer to the time when the volcano on Santorini erupted.

#### NAZIS HUNTED ATLANTIS

Despite the ground-breaking discoveries at Knossos and Santorini, Atlantis hunters have continued to send expeditions around the globe to find new and better evidence about the legendary kingdom.

The hunt has travelled from Bolivia, Mexico and Malta to the South Pole, the Atlantic Islands and Tibet, where a Nazi expedition in 1938 searched the mountains for descendants of the survivors of Atlantis. Nazi leader Heinrich Himmler had read in the occult book *The Secret Doctrine* that the descendants of the



## HELIGOLAND

■ **Norwegian Sea:** In 1940, German priest Spanuth claimed the legendary kingdom lay east of Heligoland. He later found tusks from elephants that would have lived on Atlantis.



## ATLANTE

■ **Lost island:** A few decades before Plato wrote his dialogues, the people north of Athens experienced a devastating earthquake. Tsunamis that followed in the wake of the tremors ravaged the Greek coast and destroyed parts of the island of Atlante. The earthquake may have inspired Plato's account.

## TIBET

■ **Nazis in the Himalayas:** Nazi leader Heinrich Himmler was a member of the Thule Society and convinced that the inhabitants of the legendary kingdom of Thule were survivors of the disaster on Atlantis – a kind of Aryan superhumans. He sent an expedition to Tibet to track down the Aryans, but they returned without success.



## EUROPE

## ASIA

## SARDINIA/SICILY

■ **The Italian pillars:** A number of historians have postulated that the "Pillars of Hercules" are located between Sicily and Tunisia. In this case, Atlantis could be either Sardinia or Sicily.

## BLACK SEA

■ **The flood:** When the Mediterranean broke through to the Black Sea around 5600 BC and created the Bosphorus, Atlantis was drowned in the waters, some academics suggest.

## MALTA

■ **The oldest ruins:** Home to some of the world's oldest man-made structures, Malta's archaeological remains have been taken as evidence of a Maltese Atlantis.



## AFRICA

survivors of Atlantis were a kind of Aryan supermen who would shape the world of tomorrow. The German explorers, however, returned from the Himalayas with no news.

In the 1970s, divers from the Caspian Atlantis expedition unveiled amphorae and other pottery they had retrieved from the seabed in the Caspian Sea off Azerbaijan. The pottery came from a flooded community, but was dated to the Middle Ages, so could not be linked to Plato's Atlantis.

The latest significant find came from the vast marshlands around the city of Cádiz in southern Spain. According to Plato's dialogues *Timaeus* and *Critias*, the west

coast of Andalusia is indeed an obvious spot on the map to continue the search for Atlantis.

Plato tells us that King Atlas's twin brother was granted the territory of Gadeira by Poseidon, and Gadeira was the ancient name for Cadiz. After surveying the landscape near Cádiz with radar and examining satellite photos, modern archaeologists have found the outlines of a series of circular walls in the protected marshes. Plato

describes Atlantis as being surrounded by such fortifications, so the team of archaeologists believes that nine thousand years ago, tsunamis flooded the city near

Cádiz and the inhabitants abandoned the area, leaving the region's marshes deserted.

Perhaps Plato had more to say, which he never had the chance to share. His story ends abruptly in the midst of a fateful meeting of the gods, convened by Zeus in the middle of the universe, to decide the future of the planets: "And when he had called them together, he spake as follows..." Plato concludes. The fact that it finishes mid-sentence suggests that modern-day Atlantis hunters have not had access to Plato's entire narrative, but that the work is missing pages or possibly an entire section.

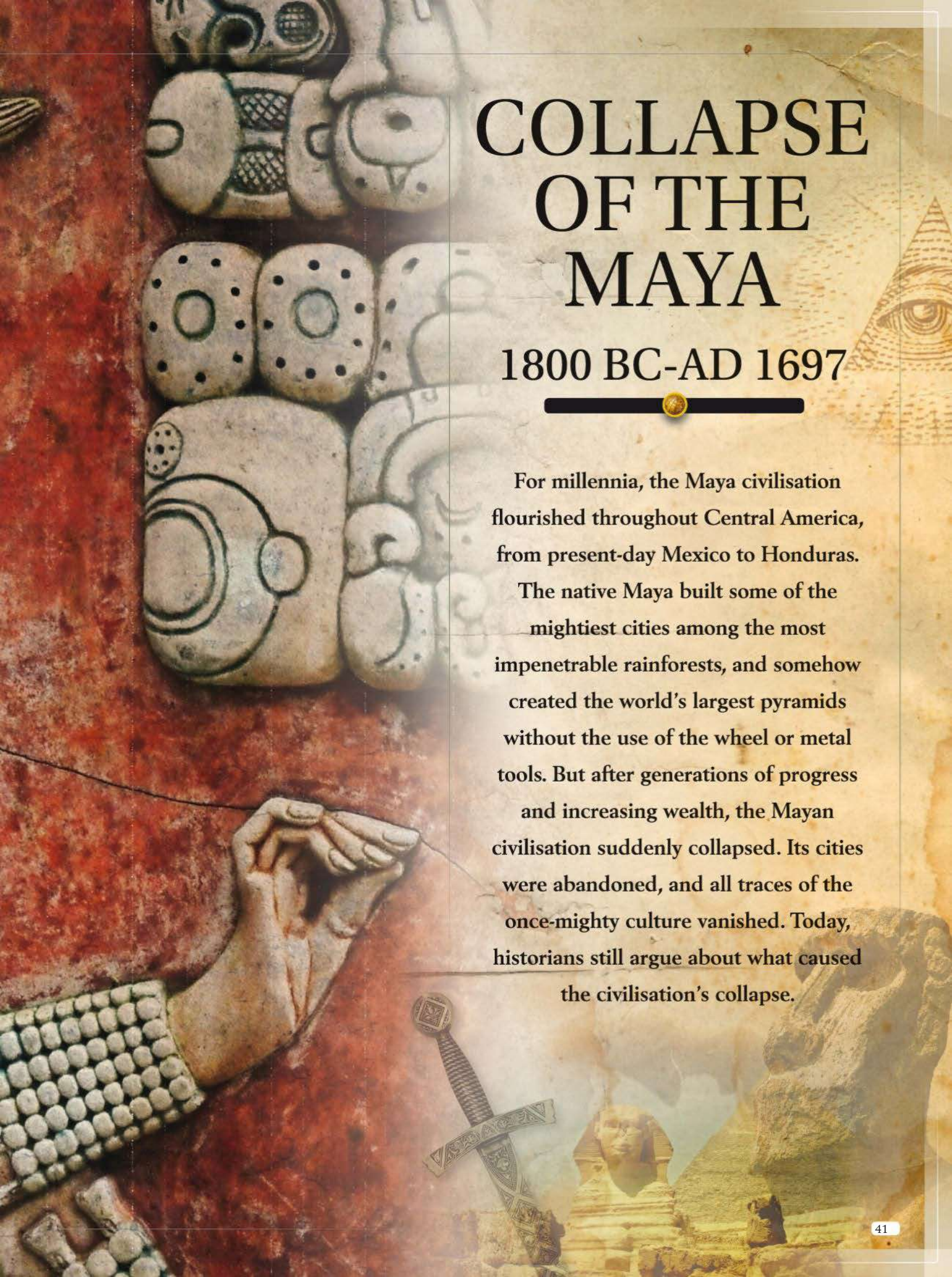
So far, historians and adventurers can only speculate whether the unknown conclusion could provide decisive clues about the lost Atlantis. ■

**77** centimetres of ash fell over parts of Crete when Santorini's volcano erupted in 1600 BC.









# COLLAPSE OF THE MAYA

1800 BC-AD 1697

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For millennia, the Maya civilisation flourished throughout Central America, from present-day Mexico to Honduras.

The native Maya built some of the mightiest cities among the most impenetrable rainforests, and somehow created the world's largest pyramids without the use of the wheel or metal tools. But after generations of progress and increasing wealth, the Mayan civilisation suddenly collapsed. Its cities were abandoned, and all traces of the once-mighty culture vanished. Today, historians still argue about what caused the civilisation's collapse.



## 1800 BC-AD 1697

1800 BC

The first small Maya cities spring up across Central America.

AD 250

The beginning of the Maya's heyday, the Classic Period.



925 War, drought and dwindling natural resources bring the golden age to an end.



1697 The last Maya city surrenders to the invading Spaniards.

925

1697

Around 1,100 years ago, one of the Western Hemisphere's most advanced civilisations suddenly began to collapse. Throughout the Central American rainforest, one giant city after another was razed to the ground and left to crumble in a matter of years. Now archaeologists are struggling to find the pieces of the jigsaw that, properly put together, can provide a complete picture of the unique history of the Maya peoples and their civilisation's downfall.

New information is constantly emerging from the ruins, but exactly why the Maya's mighty society collapsed remains a mystery to scholars.

## FROM RURAL TO CITY-STATE

Since no written record has been found chronicling the beginnings of the Maya culture, historians' knowledge of their origins is based primarily on archaeological finds. Remains of pottery shards and religious stone pillars document that around 2500 BC a number of tribes settled in present-day Mexico, Guatemala and Belize, where the Maya later built their main city-states.

The seas off the Pacific and Caribbean coasts provided abundant supplies of fish, while the land was ideal for crops like corn, beans, potatoes and pumpkins – so long as villagers were careful to burn only a small patch of rainforest at a time, cultivate it for a few years and then leave it fallow to be reclaimed by the forest. Within the forests, the early Maya could also hunt for deer, while the rivers provided another source of fish. The readily available – and plentiful – supplies of food quickly drove massive

population growth. Small, scattered settlements gradually merged into larger cities, which over centuries grew into full-blown city-states linked by a multitude of trails and paved roads that criss-crossed the increasingly cultivated rainforest.

## TREES HID GIANT VILLAGE

One of the earliest Mayan cities known to archaeologists is the ruined city of El Mirador, which lay forgotten for more than 1,000 years. Hidden beneath the crowns of trees, El Mirador appears from the air to be just a series of small mounds dotted around the landscape, but the hilly terrain hides many temples, palaces and pyramids built by the Maya over 2,500 years ago in the middle of one of the most inhospitable and inaccessible areas in the world. The city has been so well hidden by the forest that it wasn't until

1978 that archaeologists finally realised that the wilderness of northern Guatemala was hiding a magnificent historical find. In recent years, excavations of the city have taken off and El Mirador is now described as the cradle of Maya civilisation – the first genuine metropolis and powerhouse in the entire Maya region.

The city sprung up around 600 BC in the heart of the rainforest and reached its zenith during the period from 300 BC to AD 100. Some experts believe that in its heyday, El Mirador's footprint was as large as modern-day central Los Angeles. The site is home to an impressive array of temple complexes, of which El Tigre and La Danta are just two examples. The latter, with a height of more than 70 metres and spanning an area equivalent to 36 football

The Maya had its golden age in the period up to the ninth century AD, when the large cities were abandoned.



The Temple of the Inscriptions contains many of the best-preserved hieroglyphics of the Maya. They've been used to decipher their previously incomprehensible written language.

itches, is the largest pyramid in the world. La Danta is so large that explorers and archaeologists alike once believed that the trees hid not a temple but a mountain.

## NEVER TOOK THE EASY OPTION

While El Mirador was flourishing around the year AD 1, other Maya laid the foundations for a series of cities that would later rival the early metropolis in pomp, splendour and population. The centuries from around AD 250 onwards marked the Maya civilisation's peak. An impressively sophisticated society, art and culture emerged from a succession of competing city-states under the absolute rule of kings.

How the Maya created their impressive cities and buildings remained a secret for a long time. It didn't help that all the huge pyramids were made using simple tools without the use of the wheel. Many archaeological excavations in ancient Maya have uncovered stone chisels and wooden hammers, but no metal tools – even though archaeologists now know that the Maya had mastered the art of blacksmithing.

The absence of metal tools has led leading Maya experts to speculate that the Maya always sought the most difficult solution and the greatest demand on labour when building their colossal structures – probably because the Maya believed that the gods valued objects and buildings more highly if they were produced using vast amounts of human toil.

The Maya possessed no draught animals, so the work was doubly hard. Today, we know that construction was possible only because every Maya was obliged to make himself available to the king when a new religious building was to be erected. The Maya thus had a gigantic workforce at their disposal.

When the workforce built a temple, they first cut out large pieces of limestone in quarries. The stones, which could weigh up to 100 kg, were carried to the construction site by workers in a harness wrapped around their foreheads and upper bodies. Here, fellow labourers stood ready to lift the stones on to higher and higher wooden scaffolding as construction progressed. At large bonfires on the outskirts of towns, yet more workers sweated as they burned limestone to produce quicklime before

## TECHNOLOGY

## CULTURE

## ECONOMY

## DAILY LIFE



## The Maya paid with cocoa

The cacao tree played a central role in the Maya economy, where its cocoa beans were used as a means of currency. One of the earliest explorers in the area noted that three or four beans were enough to buy a pumpkin or turkey

egg. One hundred cocoa beans could be exchanged for a turkey, while a slave cost around 1,000 beans. The Maya considered the bean a gift from the gods, and for the elite, drinking chocolate became an important status symbol.



# THE MAYA WERE DIVIDED



At no point in its 3,000-year history did a single ruler unite the entire Maya culture. Instead, the Central American civilisation was fragmented into a series of small states that were in constant struggle with each other, engaging in bloody confrontations and complex alliances. The southernmost cities dominated the Maya golden age but were the first to collapse. Later, power shifted north.



## CHICHÉN ITZÁ

- **Heyday:** AD 800-1200
- **Population:** 50,000
- Chichén Itzá's rulers ruled much of the northern Yucatán Peninsula. The city is notable for its open squares and lack of hieroglyphics.

## MAYAPÁN

- **Heyday:** AD 1200-1450
- **Population:** 17,000
- Mayapán flourished after Chichén Itzá's decline and became Yucatán's most powerful city, yet it was far smaller than the metropolises of the past had been.

## CALAKMUL

- **Heyday:** AD 400-900
- **Population:** 50,000
- Calakmul was almost constantly at war with rival Tikal – a battle in which Calakmul involved many other cities. At its height, the city's king ruled over 1.75 million Mayans.



## UXMAL

- **Heyday:** AD 850-925
- **Population:** 15,000
- Behind Uxmal's walls were two great pyramids, along with an impressive four-storey temple covered in mosaics.

## TIKAL

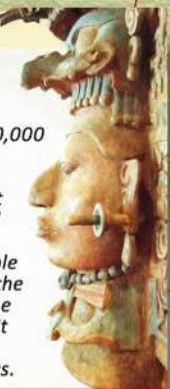
- **Heyday:** AD 200-900
- **Population:** 100,000
- From the late fourth century AD, Tikal conquered so many cities that it came close to ruling the entire Maya people. Then – for reasons still unknown – the city was abandoned in the space of just 30 years.

## EL MIRADOR

- **Heyday:** 300 BC-AD 100
- **Population:** 100,000
- First discovered in 1926, El Mirador may well have been the first major Maya city and is home to the La Danta pyramid, probably the largest in the world.

## PALENQUE

- **Heyday:** AD 600-750
- **Population:** Unknown, up to 200,000
- Palenque housed some of the largest and most important Mayan temples and palaces. One of the finest was the Temple of the Inscriptions, the burial pyramid of the mighty King Pakal. It provided the key to Mayan hieroglyphics.



## CARACOL

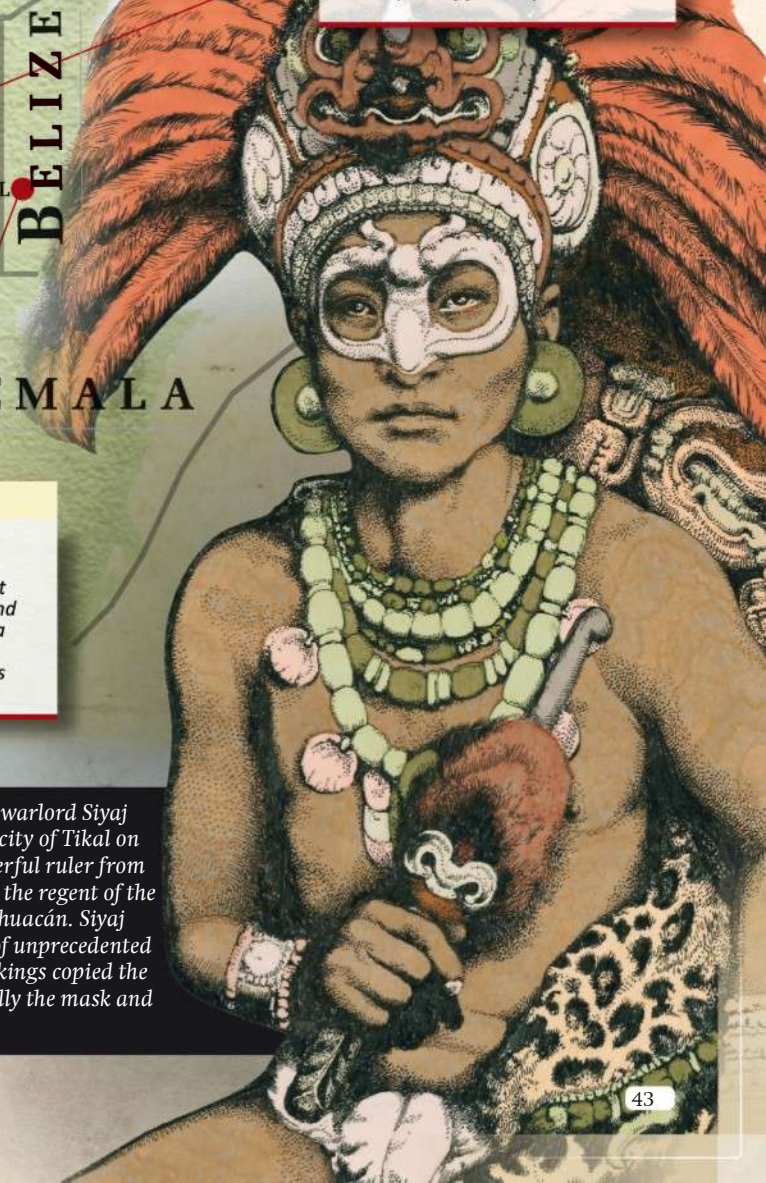
- **Heyday:** AD 500-900
- **Population:** 180,000
- Caracol was one of the largest cities in the Yucatan lowlands and played a crucial role in the Maya golden age, forming shifting alliances with the two rival cities of Tikal and Calakmul.

● Major cities

— Present-day borders

0 100 km

Ancient Mayan inscriptions say that the warlord Siyaj K'ak' – Fire is Born – captured the great city of Tikal on 14th January 378. He was sent by a powerful ruler from the west of the Maya territories, possibly the regent of the magnificent and mysterious city of Teotihuacán. Siyaj K'ak's conquest of Tikal began a period of unprecedented wealth in Maya culture, and later Maya kings copied the overlord's distinctive symbols – specifically the mask and slingshot he wears in this illustration.





## TECHNOLOGY.....

## CULTURE.....

## ECONOMY.....

## DAILY LIFE.....

## The Maya were crazy about jaguars

The jaguar is the most powerful predator in the Central American rainforest, and Maya rulers did everything in their power to be identified with the big cat. Stone-carved thrones were shaped like jaguars, and during ritual dances, rulers donned jaguar skins. The spotted feline

was one of the greatest sacrifices the Maya could make to their gods, and the Amerindian indigenous people also worshipped a host of jaguar gods. The great city of Tikal in particular adopted the jaguar as its symbol and protector for a long time.



>>>> hauling the heavy stone powder to the construction site, where it was mixed with water. Finally, the masons carefully smeared the lime mixture on to the buildings, leaving a smooth, neat surface.

Historians estimate that the Maya cut down more than 400 hectares of rainforest each time they embarked on a construction project, simply to produce the quicklime required.

### MASTERED MATHEMATICS

Building the huge temples and palaces required far more than plaster and a huge, readily available workforce. The constructions would have proved impossible without the Maya's advanced mathematical skills. Historians now know that the Maya were among the first civilisations to use the number 0, and that many of their buildings were built using the golden ratio principle that continues to guide Western architects to this day.

We know about the Maya's number system thanks to the French linguist

"One [sacred ritual] required the king to pierce the foreskin of his penis and drip the blood on to strips of paper."

Constantine Samuel Rafinesque-Schmaltz. In 1810, the French polymath discovered that the Maya used a special 19-number system, where a dot equals one and a horizontal line equals five. The number 0 was marked by a seashell. The system was

easy to calculate, and coffee beans laid on the ground were one element used by the Maya to aid with their calculations.

As early as 500 BC, the Maya used advanced calendars to decide when to sow and harvest. They followed two calendars in parallel: a religious calendar with 260 days in a year and a 365-day

calendar that followed the sun and the seasons. The calendar system covered the years 3114 BC to AD 2012, and the Maya even knew to correct dates using leap years, just as we do today.

### THE SPANIARDS BURNED BOOKS

The Maya were also the only people in the Americas to have developed a full and complex written language, and the civilisation was among a select few to

incorporate the recording of contemporary events for posterity into their culture. One of the clearest examples has been found by archaeologists in the city of Palenque. During the reign of the mighty King Pakal, which lasted almost 70 years, the city's inhabitants built many magnificent buildings, and Pakal left behind a priceless collection of written sources in the form of hieroglyphics on stone tablets and temple walls. One notable example can be found in the so-called Temple of the Inscriptions – Pakal's own funerary pyramid – where archaeologists found a stone tablet with one of the longest Mayan texts comprising over 600 hieroglyphs.

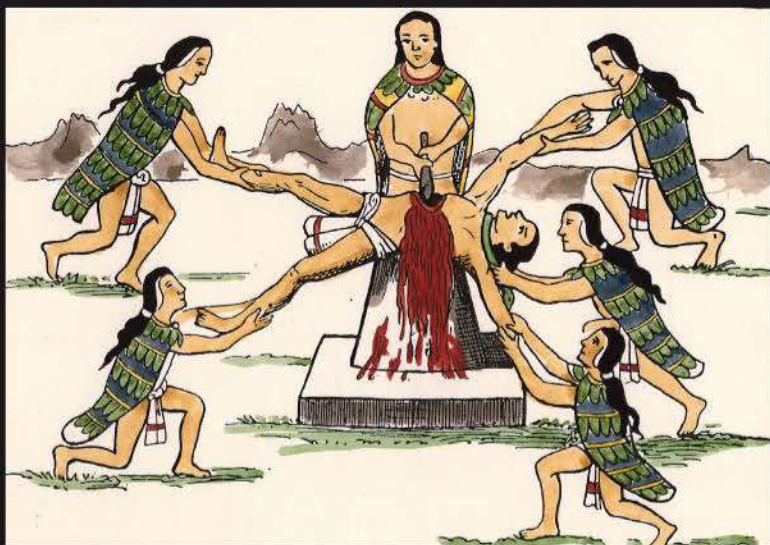
Unfortunately, countless other Maya city-states' attempts to tell their story were almost certainly lost when the Spanish conquered Central America. The Catholic Spaniards saw it as their sacred duty to convert the pagan natives to Christianity. Priests and monks regarded the Maya's sophisticated writings and enigmatic hieroglyphics as the work of the devil, and anything that smacked of native faith and mythology was confiscated and destroyed.

In the name of the Holy Inquisition, the Spaniards burned thousands of the Maya's special codices, which were written on paper made from bark. Only four such folding books – almanacs containing historical, religious and astronomical records – survived the religious Spaniards' systematic burning.

The Maya scholars who wrote down the history of the people in their own language were also burned at the stake for heresy, and knowledge of the ancient Mayan script disappeared. By the eighteenth century, the written language was virtually extinct.

### TEENAGER CRACKED CODE

The four surviving codices, combined with hieroglyphs on temples, monuments and



**A** On a sacrificial stone, the priests opened the chests of their human victims and ripped out their beating hearts to hand them over to the gods.



**B** The Maya decorated their buildings with animal and human figures. Bats symbolised death and sacrifice.



**C** On the plateau at the top of the pyramids, the king performed his ritual dances to please the gods.



ceramics, are now vital tools in linguists' tireless efforts to decipher the Mayan alphabet. For a long time, Mayan writing was pure gibberish, but in 1984, 18-year-old genius David Stuart finally cracked the code. The young American developed an old theory that the Mayan glyphs were not letters or words, as most scholars had previously believed. Instead, Stuart demonstrated that the Maya used a phonetic alphabet, with each character representing a sound. Stuart discovered that many larger hieroglyphs were composites of several smaller hieroglyphs, and that up to 15 different characters could represent a single sound. This is precisely why earlier linguists had had difficulty decoding the Maya's written language.

Stuart's discovery has led to a quantum leap forward in deciphering Mayan hieroglyphics in recent decades, and researchers can now read around 80 percent of the complex alphabet, which contains over 800 characters.

#### WARS RAVAGED THE MAYA

Hieroglyphs reveal that the highly advanced Maya excelled not only in mathematics, architecture and astronomy, but equally in warfare, bloodshed and human sacrifice. The Mayan script relates stories of city-states constantly at war with each other in an attempt to become the region's dominant force. At no time,



Only four Mayan codices have survived – the Spanish burned the rest.

however, did a single king become so powerful that he could rule the entire Maya. The city of Tikal came closest when, from the fourth century AD, its inhabitants subjugated several smaller cities as vassals.

#### SACRIFICED TO THE GODS

Mayan writings also reveal a religious culture in which human offerings to the gods were widespread. Often a sacrifice was made to an enemy city-state king after a victory in war, but even in peacetime the Maya had to make blood sacrifices to satisfy the gods and ensure society's well-being. Usually, the victims were prisoners or slaves, but ordinary inhabitants could also be forced to forfeit their lives for king and country. In

these cases, the person sacrificed was guaranteed honour for eternity after death.

Even Maya rulers sometimes had to bow to the gods. One of the most sacred rituals required the king to pierce the foreskin of his penis and drip the blood on to strips of paper, which were then burned. The ceremony was said to open a door to the realm of the gods, so that in the smoke of the burnt

paper the priests could see the gods and communicate with them.

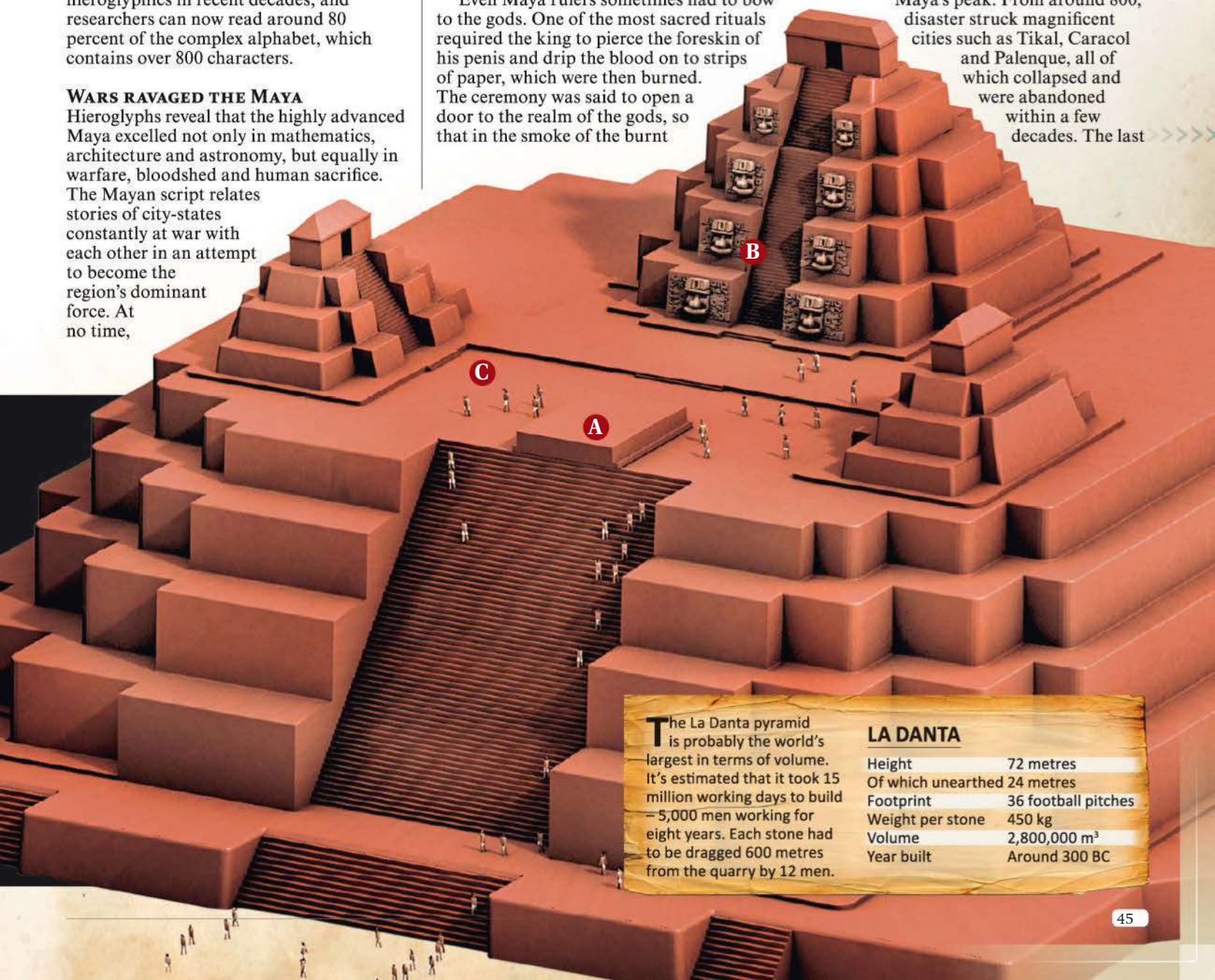
The Maya also sought to please the gods through physical contests, and the pok-tapok ballgame was particularly popular. The exact rules are unknown, but the game involved keeping a large rubber ball in motion without using hands or feet. The ball may have symbolised the sun, so players competed to avoid being the team that 'stopped the sun'. Defeat dishonoured the gods and could result in a bad harvest. Therefore, the captain of the losing team – or possibly the entire team – had to be sacrificed to appease the gods.

Different varieties of this bloody game were widespread throughout Central America from before 1000 BC.

#### CITIES FINALLY COLLAPSED

Despite their constant attempts to appease the gods, the Maya proved unable to save their civilisation from impending doom. By AD 150, the great city of El Mirador had mysteriously morphed into a ghost town – a harbinger of what would later befall some of the most powerful city-states during the

Maya's peak. From around 800, disaster struck magnificent cities such as Tikal, Caracol and Palenque, all of which collapsed and were abandoned within a few decades. The last



The La Danta pyramid is probably the world's largest in terms of volume. It's estimated that it took 15 million working days to build – 5,000 men working for eight years. Each stone had to be dragged 600 metres from the quarry by 12 men.

#### LA DANTA

Height	72 metres
Of which unearthed	24 metres
Footprint	36 football pitches
Weight per stone	450 kg
Volume	2,800,000 m <sup>3</sup>
Year built	Around 300 BC



# “The last recorded date in the city of Palenque was 799,”

recorded date in the city of Palenque was 799. Twenty years later, all building work stopped in Copán. In Caracol, hieroglyphic carvings ceased in 859, while the last character in Tikal was carved in 879. The southern lowlands, where the most powerful cities were found, saw its population nosedive from as many as ten million to under two million in less than a century. Historians still don't know why.

During and after the collapse of the great cities, some of the Maya migrated to cities such as Uxmal, Mayapán and Chichén Itzá in the far north of the Yucatan Peninsula. Here, Maya culture blended with the traditions of other peoples and lived on for hundreds of years.

But although the cities of the north saw massive population growth, the new centres of power at Chichén Itzá and Mayapán never reached the same heights as the southern city-states of the Maya heyday, which historians have named the Classic Period. No longer ruled by divine kings, the cities of the new, post-classical period were a kind of military dictatorship run by the upper classes. The royal families no longer needed to immortalise their deeds or justify their divine right to the throne, and the distinctive hieroglyphics died out as architecture moved away from large pyramid construction.

Instead of classical architecture and hieroglyphic writing, the Maya of Chichén

Itzá devoted themselves to astronomy. The stars now played a major role in Maya life, and key decisions were made based on the position of the planet Venus in particular.

The supreme example of Yucatan Maya's astronomical prowess still towers over the ruins of Chichén Itzá. El Castillo (The Castle – as the Spanish dubbed it), also known as the Temple of Kukulcán, is the world's largest calendar: a 30-metre-high step-pyramid, with a total of 365 steps

to the top – one for each day of the year. On each side of the steps, the pyramid was divided into nine levels, which together represented the 18 months of the Mayan calendar.

When the sun fell perfectly on the pyramid, the shadows formed a snake – the demigod Kukulcán – that wound its way down the pyramid towards the earth. And when Kukulcán came to visit, the rainy season was at hand.

Chichén Itzá's heyday, however, lasted only a few centuries before the northern metropolis suffered the same

fate as the Maya cities in the south: development and construction halted, and the population plummeted. Mayapán later suffered the same fate.

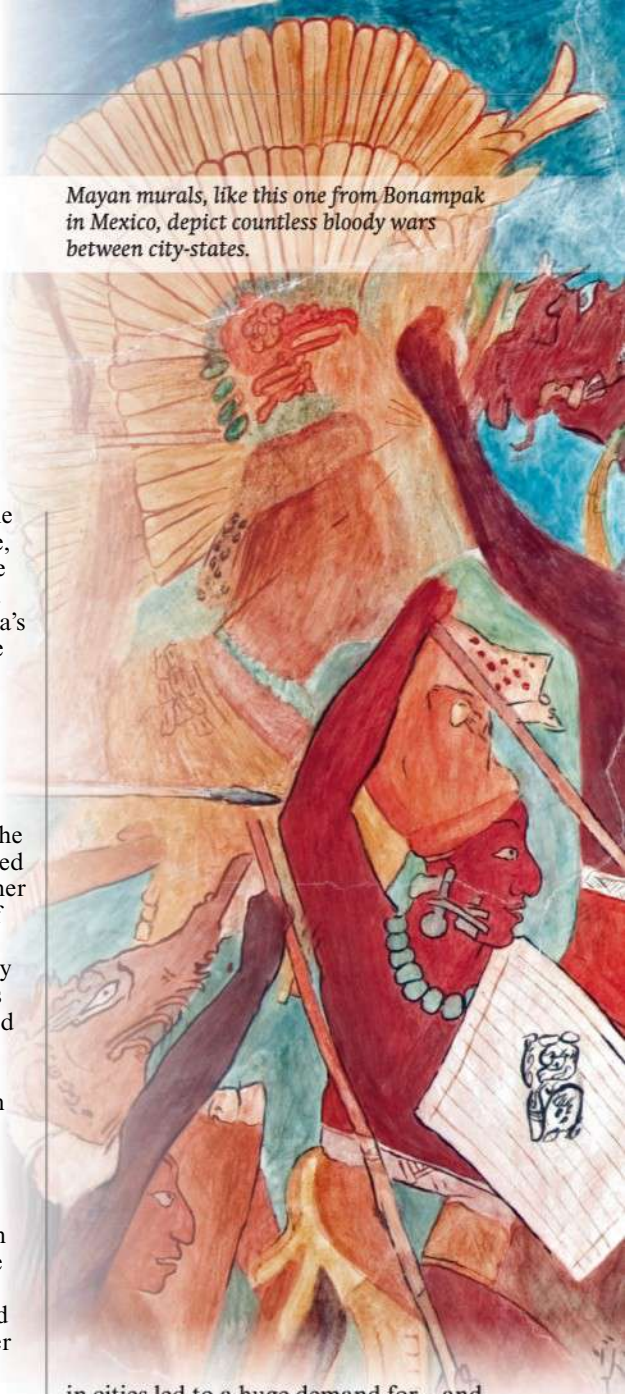
## COLLAPSE HAD MANY CAUSES

Historians and archaeologists have put forward a large number of theories about the causes for the collapse of the Maya sites. Some suggest that trade routes

gradually changed, bypassing the major cities, and that the inhabitants therefore moved to more productive areas – or that the citizens deserted the city-states in large numbers in protest against the perpetual wars.

However, the latest research suggests that the Maya were probably responsible for their own demise. The massive population growth

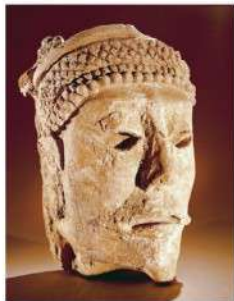
Mayan murals, like this one from Bonampak in Mexico, depict countless bloody wars between city-states.



in cities led to a huge demand for – and consumption of – natural resources. The farmers tasked with feeding the rapidly growing population were forced to skip the necessary fallowing of the land, which depleted the nutrients in the arable fields and reduced yields. In order to obtain sufficient farmland, Maya farmers also cut down the rainforests on the hillsides above the lowlands where towns and fields originally lay, and without the rainforest's root system, the rains drained away quickly during heavy downpours. The nutrient-poor soil from the hillsides swept down into the valleys, where it not only made the land less fertile, but also washed into the rivers, making the water undrinkable.

At the same time, the Maya were cutting down more and more trees to burn lime to spread on everything from grand structures to smaller houses. Archaeologists estimate that massive logging resulted in drought in large areas of otherwise fertile Maya land in the eighth and ninth centuries – the very time when the Maya abandoned their cities.

The drought severely affected agricultural crops and resulted in the water



The Maya decorated their buildings with figures like this one from the city of Comalcalco.

## MEANWHILE IN EUROPE

### ATTILA RAVAGES THE ROMANS

While the Maya of Central America experienced a golden age in the years AD 300-900, Europe entered the Dark Ages. The Romans lost control of province after province, and the empire split into western and eastern halves. In the fifth century, the Hun King Attila swept in from the east to raze Europe's cities. Nomads occupied the northern Balkans and extorted large amounts of gold from the Eastern Roman emperor. In 452, Attila rampaged through Italy, but failed to take Rome itself. The feared king died the following year.







table dropping to inaccessible levels. The natural variations in rainfall from year to year that were characteristic of the Maya region would simply have made the drier years even more barren.

As food and water became increasingly scarce, some scholars believe that Maya wars became even more intense as the various city-states fought over ever-dwindling resources. The wars further exacerbated the food situation because they limited the possibility of finding new farmland: If farmers moved too far away from their home towns, they risked getting too close to an enemy city.

#### MILLIONS BECAME ILL

However, no theory explains why – or how – cities died out completely, instead of just experiencing a sharp reduction in their respective populations.

Archaeologists have yet to find the hieroglyphics that tell the direct story of the Maya's collapse – the answer may have been in the many Maya codices the Spanish

burned as the European invaders rampaged through Central America.

By the time the Spanish conquistadors took the Yucatán Peninsula and the ancient Maya region in the sixteenth century, all of the formerly magnificent cities had been abandoned. The mighty and sacred kings were long gone and no armies took up the fight against the Spaniards.

Instead, the invaders were met by small, warlike Maya villages, fighting a kind of guerrilla war against the conquistadors.

The Spanish brought with them something even deadlier than their superior weapons, however: disease. After their arrival, 90 percent of the

indigenous population died from diseases like smallpox, measles and influenza, which the Europeans' immune systems had spent millennia adjusting to. The Maya, on the other hand, were completely unprepared.

Seven million Maya inhabited Central America when the Spanish arrived. Only half a million survived the Europeans' diseases. Yet the Maya continued to rebel

against the Europeans for centuries, and the last Maya city held out until 1697.

#### CITIES REDISCOVERED FROM SPACE

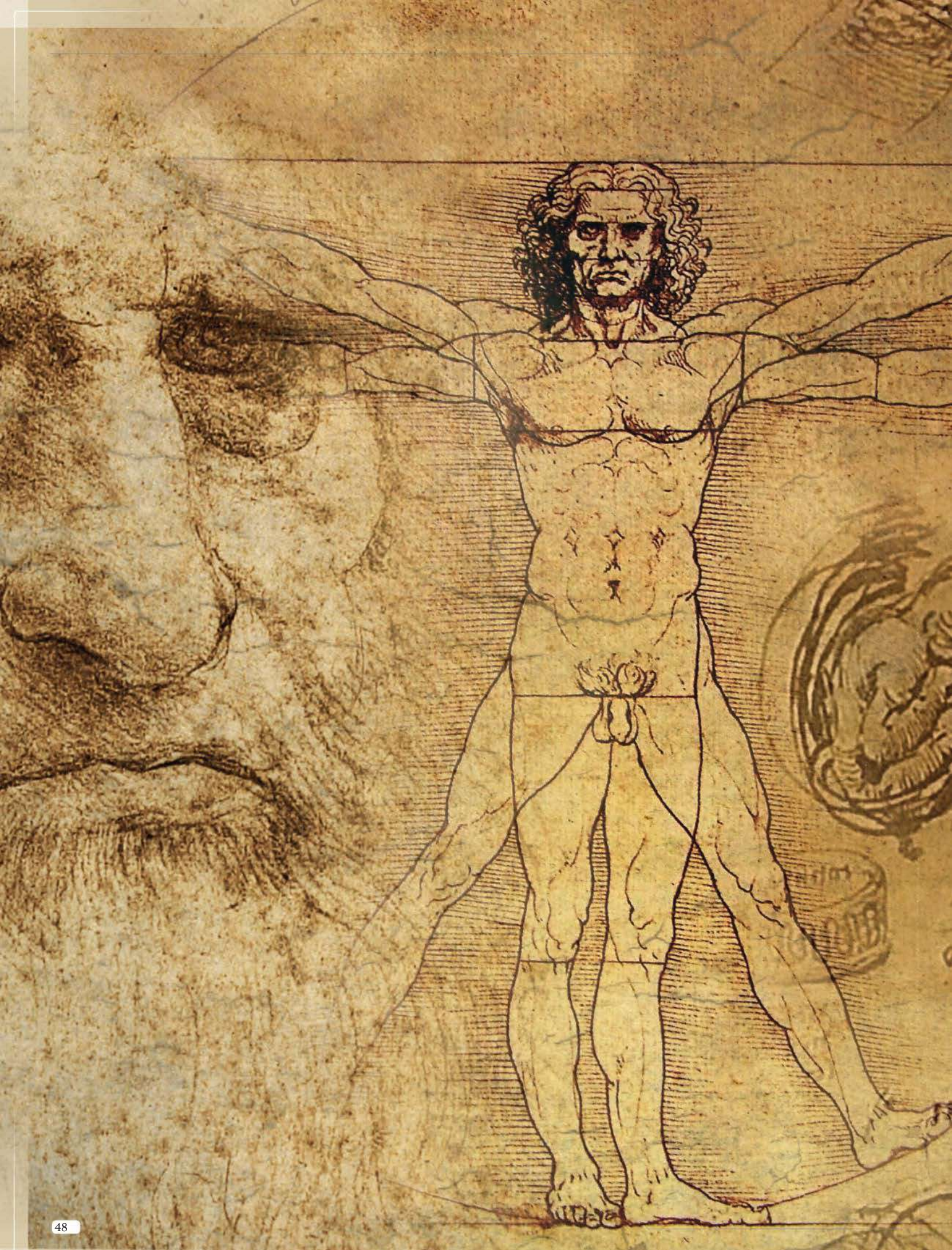
The Maya built more than 100 cities spread across the Yucatán Peninsula and Central America. The possibility of finding the ruins of more Mayan cities is therefore very real, and the search is now more intense than ever. Both NASA and the US University of New Hampshire have been mapping the Central American forest landscape from space in recent years, hoping to find more hidden cities that may be invisible from the ground – such as the giant city of El Mirador, which remained undiscovered until 1926.

More than a thousand years after the Maya heyday, archaeologists are still finding new pieces of the Maya puzzle. And maybe one day they'll find the critical piece that reveals the full picture: written sources that survived the relentless Spanish onslaught of the sixteenth century. The hope is that the truth lies hidden in the hard-to-reach areas of Central America that have yet to be explored. ■

**2,800,000**

cubic metres  
is the volume  
of the Mayan La  
Danta pyramid,  
making it the  
world's largest.








A background collage featuring Leonardo da Vinci's sketches. On the left, a sketch of two hands is visible. Below it, a sketch of a winged figure is partially shown. The background is filled with faint, mirrored handwriting from da Vinci's notebooks. On the right, a sketch of an eye is visible.

# ON THE TRAIL OF DA VINCI

1452-1519

A decorative horizontal line with a small gold coin in the center.

For five centuries, the Mona Lisa's enigmatic smile has inspired theories about what the painting is trying to tell us.

The priceless portrait is Leonardo da Vinci's most famous work, but it's far from the only one that continues to confound and confuse. Academics are still trying to piece together the puzzle of the Italian inventor, and have delved into the polymath's ground-breaking sketches of tanks and helicopters, as well as his 6,000-plus pages of notes in-mirror writing, to learn more.



## 1452-1519

**1467** The young Leonardo is apprenticed to the craftsman Verrocchio.

**1481** Milan's ruler, Ludovico Sforza, hires Leonardo.



**1489** He invents the aerial screw, which looks like a helicopter.

**1503** Leonardo adds the first brushstrokes to the *Mona Lisa* painting.

**1519** Da Vinci dies at the French royal palace of Amboise.

1467 >>> 1481 >>> 1489 >>> 1503 >>> 1519 >>>

The modest drawing depicts a mountainous landscape with a river cutting through a valley, with steep slopes on either side. On a ridge to the left, a castle looks out over the valley. Above the castle's tower on the yellowed paper, the artist has dated the picture with the inscription: "The day of St Mary of the Snow, 2 August 1473." But it takes more than ordinary reading skills to decipher the scrawl, because the letters are written backwards, from right to left. The cryptic writing has become synonymous with the signature in the lower-right corner of the drawing: Leonardo, referring to Leonardo da Vinci. The drawing is the earliest of his works known to historians.

For 500 years, the early Renaissance artist's works have made academics ask more questions than they have been able to answer. Da Vinci is the man behind the world's most famous painting, the *Mona Lisa*, which fascinates and astounds visitors from its popular spot in the Louvre museum in Paris. His sketches of pioneering war machines still have scholars wondering how the Italian polymath could devise tanks and helicopters centuries before they became reality. And his love of coded writing and fables has fuelled the imagination of admirers who have tried to follow in his footsteps.

Much of da Vinci's work has been lost for ever, and for half a millennium, historians have been trying to piece together his life and works. But the fragments still haven't fallen into place. Academics still debate which

paintings were his, even though the artist's distinctive painting style gives him away.

The greatest source of knowledge about the genius lies in his manuscripts and sketches, most of which he kept secret throughout his life – 6,000 pages of notes written in mirror writing.

### NATURAL TALENT WAS NURTURED

In the late Middle Ages, the heavy clouds of war drifted over Italy. Not only were the Italian city-states battling each other, but Turkish Ottomans threatened from the east and French armies from the north.

It was on to this stage that Leonardo was born on 15th April 1452, named after his birthplace of Vinci near Florence. Leonardo was the illegitimate child of a peasant girl and a notary, and shortly after his birth, his mother married another man. Leonardo grew up with his father and half-siblings. From an early age, he was interested in nature, and because of his father's position as a notary, historians assume that he received a good school education.

Not far from his birthplace, the cultural avant-garde flocked to Florence, the art capital of Europe at that time. Leonardo's father's contacts led to an apprenticeship with the craftsman Andrea del Verrocchio in Florence, around 1467. The 15-year-old Leonardo was already getting on a bit compared to other apprentices, who usually started at the age of eight, but he soon proved to have an extraordinary talent. Verrocchio, his master, worked as a goldsmith, draughtsman, engraver, painter, sculptor and musician, and his young apprentice drew inspiration and knowledge from every discipline. Leonardo probably began as a general labourer, sweeping up and mixing pigments for paint, before

**80** tonnes of bronze were required by da Vinci for an equestrian statue commissioned by Sforza.



This small sepia picture of 1473 is the earliest surviving work by Leonardo da Vinci and anticipates landscape painting as a genre.

Verrocchio began to train him in drawing and adding colour. Eventually, he was given a brush and allowed to assist his master with his paintings. He had lofty ambitions, da Vinci's later notes reveal.

### BROKE THROUGH AS A PAINTER

His earliest surviving work – the small sepia picture of the Italian countryside – already stood out from typical pieces of the time, because landscape painting didn't become an established genre until the mid-sixteenth century. But Leonardo really showed his skills when he was allowed to depict an angel in Verrocchio's painting *The Baptism of Christ* in the 1470s. Both his master and the other apprentices were deeply impressed by Leonardo's work, which almost supernaturally expressed the emotions of the angel, with a softly shaped face and fine, downy hair.

Art historians today agree that Leonardo's use of light and shadow was far ahead of its time. In the artist's mirrored notes, it says that he experimented with light in his paintings from the very beginning. He set up pieces of cloth and painted them in different levels of light. Leonardo was keen to find out how the human eye perceived light and in what way he could use this knowledge in his work.

"[I am not] a man of letters ... Experience has been the mistress of >>>>>

Leonardo's talent caught Verrocchio's eye when he assisted his master with the painting of *The Baptism of Christ*. The young Leonardo was allowed to paint the angel holding Jesus's robe.

ANDREA DEL VERROCCHIO 1435-1488

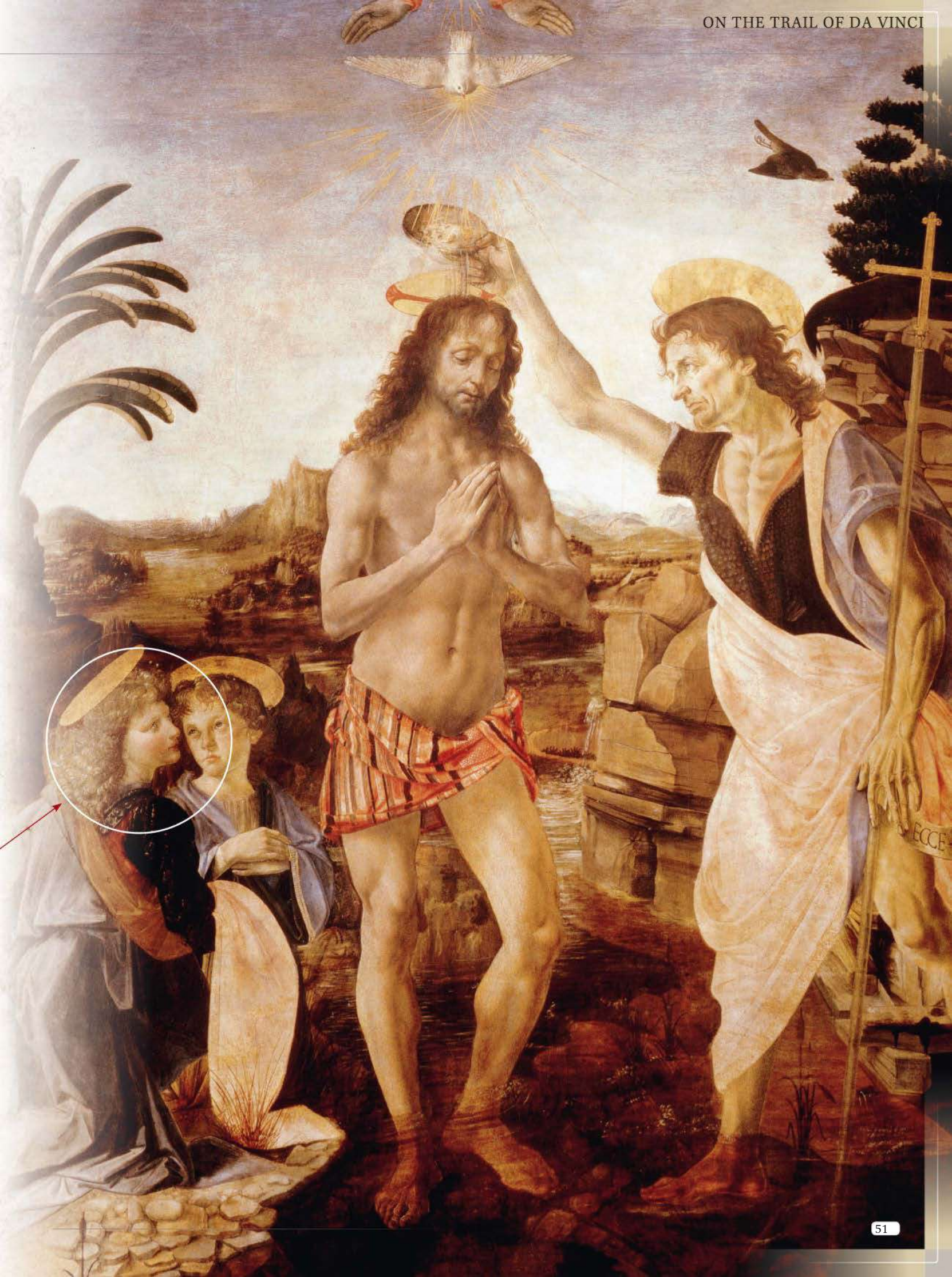
## LEONARDO'S MENTOR

■ The Italian craftsman Andrea del Verrocchio originally trained as a goldsmith, but worked mainly as a sculptor, draughtsman and painter. His workshop was one of the most prominent in fifteenth-century Florence. Verrocchio created impressive and innovative works, which many later artists came to imitate. Among other works, he sculpted a famous figure of David with Goliath's head at his feet, which can be seen today

in the Bargello Museum in Florence. After the great Florentine artist Donatello died in 1466, Verrocchio rose in standing among the city's rulers, the Medici. As well as painting and creating sculptures for the Medici, he also designed costumes for their great parties, tournaments and receptions. In 1467, the craftsman apprenticed the young Leonardo da Vinci, introducing him to painting and bronze casting.

Multi-disciplined – Leonardo da Vinci's master – Part of Florence's art elite









“ [I am not] a man of letters  
... Experience [is] the mistress  
of whoever has written well. ”

whoever has written well,” he later wrote in his notes. His studies of light and shadow would become the basis for later masterpieces, such as *Lady with an Ermine* and the world-famous *Mona Lisa*. Leonardo himself explained that a painter's job was to give the viewer a sense of depth. This was already accepted, but da Vinci took the concept further.

#### ACCUSED OF SODOMY

Despite his obvious talent, da Vinci's career almost ended before it began. Along Florence's city walls, boxes were set up for citizens to report each other for heresy. That fate befell the colourfully dressed and rather eccentric Leonardo in 1476, when he was reported and arrested for a homosexual relationship with a 17-year-old prostitute – a charge that could have cost him his life if he was found guilty. The case was dropped, however, and before long he was free again. But the event left its mark on the young

artist. The charge of sodomy alone could have ruined his future career, and he became uncomfortable about displaying his work in public. Some scholars believe the incident may explain a lifetime of secrecy.

During Leonardo's apprenticeship in Florence, the city had been spared war, but in 1478 a wave of violence hit the city. The Florentine Pazzi family tried to wipe out Florence's ruling family, the Medicis, during mass in the cathedral, but without success. The rebellion was violently suppressed and the culprits were dragged bleeding through the streets to the cheers of the citizens. Although Leonardo said he abhorred violence, that didn't stop him from taking out his pen and sketching the dead on the gallows in minute detail. On one drawing of a hanged man, he soberly wrote notes about the dead man's attire.

#### WORKS WERE WASTEFUL

Despite there being few sources, historians are certain that Leonardo da Vinci established a name for himself in Florence, and in 1481, the first major commission arrived. The monks of the monastery of San Donato a Scopeto outside Florence asked him to decorate an altarpiece. Records show that Leonardo worked on the painting for six months until payment stopped, at which point all trace of his work disappeared. Da Vinci never finished the painting, and this was to become one of the defining characteristics of his work. Today,

*Lady with an Ermine from 1488–90 portrays the mistress of Ludovico Sforza, Cecilia Gallerani.*

## FADED SUPPER

In 1494, da Vinci was commissioned to decorate the monastery of Santa Maria delle Grazie with a painting of the Last Supper. The work depicts Christ announcing that one of his 12 disciples would betray him. It was completed in 1498.



#### BEFORE RESTORATION

Da Vinci chose to paint on a dry wall with tempera, a mixture of egg and pigments. Just a few years later, *The Last Supper* began to fade, and within 20 years the painting showed clear signs of decay.

#### AFTER RESTORATION

As early as the sixteenth century, the first restorations of the painting began. Work has been ongoing ever since. Over the centuries, the painting was patched up layer upon layer with oil paint and varnish – not always successfully. Only in the most recent restoration from 1979–99 did conservators peel away all the previous repairs to recreate the masterpiece directly on the original version.



scholars believe that the altarpiece can be found in the unfinished painting *Adoration of the Magi*, depicting the Virgin Mary with the infant Jesus. A rough sketch for the piece shows that the artist composed the painting based on a strict geometry. And in the unfinished artwork, he has embellished the spectators' body language and facial expressions down to the smallest detail. Both of these features set the work apart from earlier interpretations of the familiar motif, and broke new ground in painting.

His unfinished masterpieces have given rise to speculation as to why he did not finish his works. But perhaps the artist's notes provide an explanation for this working method:

"Men of lofty genius sometimes accomplish the most when they work least," he wrote. Historians believe that the artist simply wasn't interested in putting the finishing touches to his works. What mattered was not the goal, but the knowledge he gained from his work. His many handwritten pages reveal countless thoughts, ideas and almost an obsession with investigating how nature, man and the universe were constructed and functioned. In this way of thinking, he was far ahead of his time.

Conversely, his unfinished works were seen by his clients as wasteful, which is probably why Leonardo was never selected for major prestige projects. For example, the decoration of the Sistine Chapel in the Vatican, built in 1481, went instead to his artistic rival Michelangelo.

#### WORKED AS PARTY PLANNER

In 1481, Leonardo, now 30, left Florence, the city of art, for Milan. The city, with its geographical proximity to the great power of France, was constantly on the verge of war. Milan was the centre of a large military industry, and Leonardo's eyes were

soon caught by the impressive war machines. He had no doubt, however, that he could offer something more advanced, as a letter he wrote to Milan's ruler, Ludovico Sforza, shortly after his arrival, shows. In the letter, he recommended himself as a military engineer, and without any practical experience of weaponry, he offered his visionary ideas on assault towers, mines, artillery and more.

Da Vinci's words didn't convince the powerful Ludovico Sforza, however, who instead hired him for artisan jobs, such as painting altarpieces, portraits and other commissioned work. Of the more spectacular jobs, da Vinci also became Ludovico Sforza's party planner, reportedly planning the Feast of Paradise at the wedding of Duke Galeazzo and Isabella of Aragon in 1490. His earnings from the feast were as modest as that of the court dwarf.

#### 6,000 PAGES OF NOTES

The earliest known of Leonardo's famous notes, which

would later grow to a collection of over 6,000 pages, date from his earliest days in Milan. Written backwards from right to left in mirrored script, the notes describe how da Vinci meticulously studied the phenomena, structures and details of the world around him.

He sought out the learned men of the day and spent long days in Milan's library, learning about everything from geometry and proportionality to architecture and the positions of the planets. But above all, he relied on his senses and his sketchpad:

"Now, do you not see that the eye embraces the beauty of the world? The eye is commander of astronomy; it makes cosmography; it guides and rectifies all the human arts; it conducts man to various regions of the world; it is the prince of mathematics; its sciences are most certain," >>>>

#### IT billionaire

Bill Gates bought a da Vinci manuscript for \$163 million in 1994, the world's most expensive book to date.

## IN THE ARTIST'S STUDIO

### PAINTED WITH EGGS AND FEATHERS.

**A**s an apprentice to Andrea del Verrocchio, Leonardo da Vinci learned the tricks of the artistic trade that he continued to use throughout his career.

**1** Egg yolk and pigment were mixed to make what is known as egg tempera. The method is one of the oldest ways of making paint. Later, Leonardo was one of the first in Italy to use oil paints, made from walnut oil, for example.

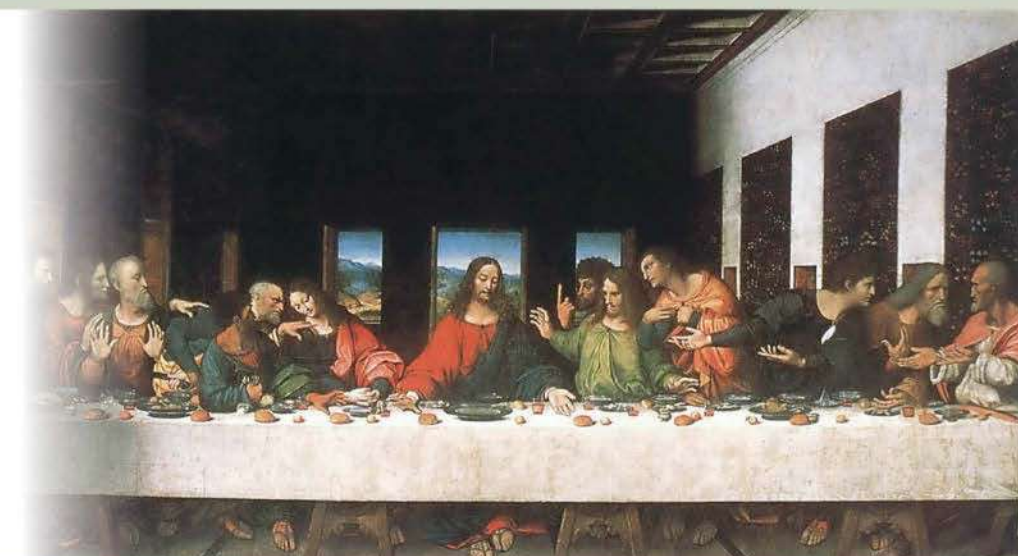
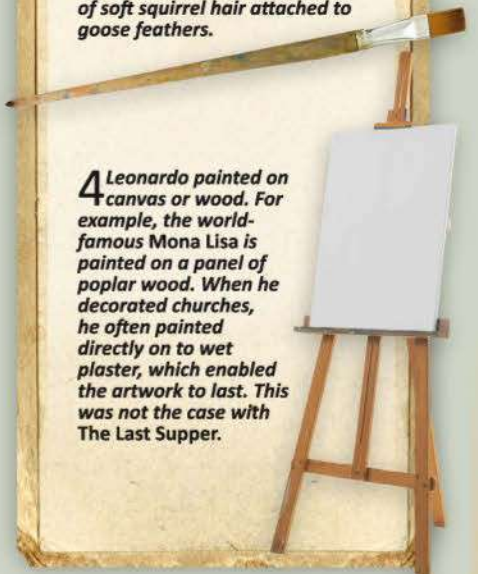


**2** The colours in Leonardo's paintings came from minerals. Green was extracted from copper, while red and yellow came from soil. Plum juice was another common dye.



**3** During the Renaissance, many artists painted with brushes made of pig's hair. The smallest details were stroked on to the canvas with fine brushes of soft squirrel hair attached to goose feathers.

**4** Leonardo painted on canvas or wood. For example, the world-famous Mona Lisa is painted on a panel of poplar wood. When he decorated churches, he often painted directly on to wet plaster, which enabled the artwork to last. This was not the case with *The Last Supper*.





he wrote. Although Leonardo swore by his eyes' empirical study of the world, his descriptions also bordered on the poetic. In 1490, he set down the fable of the rain:

"The water finding that its element was the lordly ocean, was seized with a desire to rise above the air, and being encouraged by the element of fire and rising as a very subtle vapour, it seemed as though it were really as thin as air. But having risen very high, it reached the air that was still more rare and cold, where the fire forsook it, and the minute particles ... united and became heavy; whence ... it fell from the sky and was drunk up by the dry earth." Such stories have undermined the image of a rigorously scientific Leonardo in the hands of those who have tried to fathom him.

Why da Vinci obscured his notes with mirrored writing is another unanswered question. While some speculate that the genius wanted to keep his ideas secret, others suggest it was simply easier for the left-handed Leonardo to write backwards.

### THE GENIUS'S ART OF WAR

Although Leonardo describes war as bestial madness in his notes, during his service with Ludovico Sforza, he also became an expert in weapons and fortifications – again, far ahead of his time. His eager hand sketched fearsome contraptions, such as a giant crossbow, a lawnmower-like death machine that could cut the legs off ten enemies at a time, and an armoured tank.

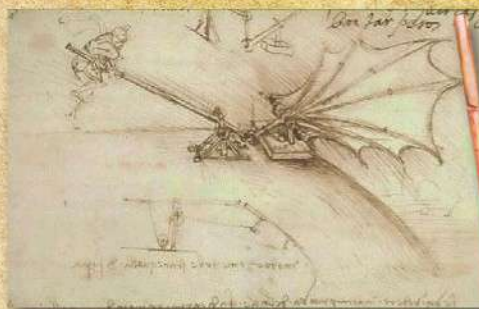
Da Vinci may have found inspiration in books such as *De Re Militari* from 1472, which describes Roman war strategy and techniques. His sketches of weapons such as bows, clubs and slings could also have roots in antiquity. But wherever the inspiration came from, the genius developed the concepts into ground-breaking innovations. In modern attempts to get under the skin of the polymath, several of his inventions have been recreated and tested. Many of them – such as a parachute – work perfectly. Others, according to later academics, are more like flights of fancy than combat-capable weapons. Da Vinci's warship would probably sink under the weight of its guns, and his machine gun would be difficult to load. What became of the ideas is not known, but today there is no evidence that Leonardo's sketches were ever made into genuine weapons.

In the summer of 1499, France invaded Milan and Leonardo lost his job with Ludovico Sforza for good. At 47, he left the war-torn city. Unemployed, he travelled to Venice and approached the duke with his ideas for war machinery and defensive works. Among da Vinci's proposals were a machine that could take off from the ground by imitating the flight of birds, and a special suit that could help a human breathe underwater. But the duke failed to see the brilliance of the inventions.

Nevertheless, Leonardo da Vinci continued to pursue military contracts. His next important client was Pope Alexander

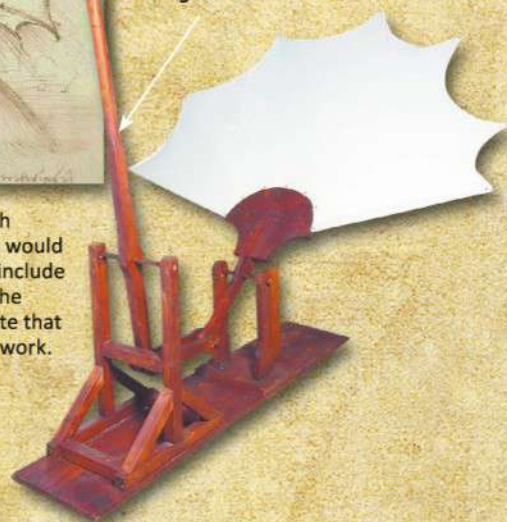
## FUTURISTIC INVENTIONS

Leonardo da Vinci's notes are peppered with sketches of inventions that only became reality hundreds of years later. The pioneering polymath notably devised a range of deadly war machines and flying contraptions.

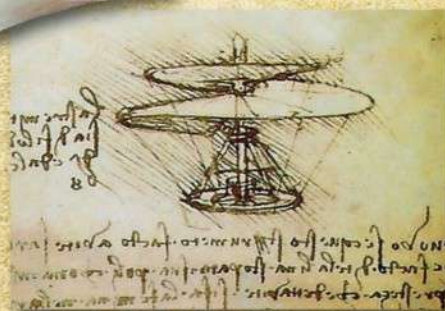


The weight of a human made the wing move.

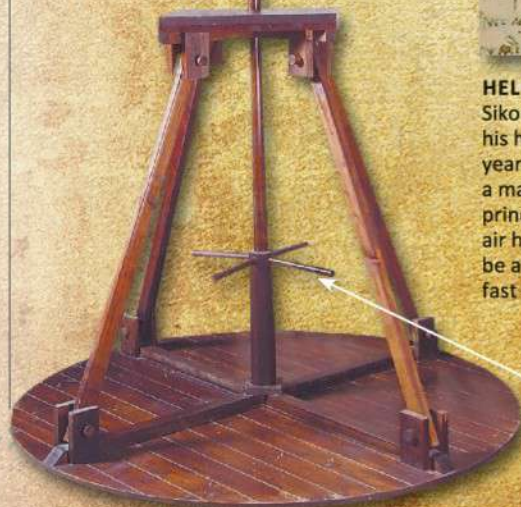
**WING, 1489:** Da Vinci was obsessed with exploring aerodynamics, and this design would test the power of a wing. His notes also include sketches of flying machines that mimic the movement of birds, as well as a parachute that has since been recreated and proven to work.



The fabric sails had to be soaked in starch to become windproof.



**HELICOPTER, 1489:** Soviet engineer Igor Sikorsky first took off from the ground in his helicopter in 1940, but more than 400 years earlier, da Vinci had already sketched a machine that would fly using the same principle. He had come to the conclusion that air has mass, so a screw made of sails should be able to bore through the air if it rotated fast enough.



Four men on the platform had to rotate the central post to create power in the aerial screw.

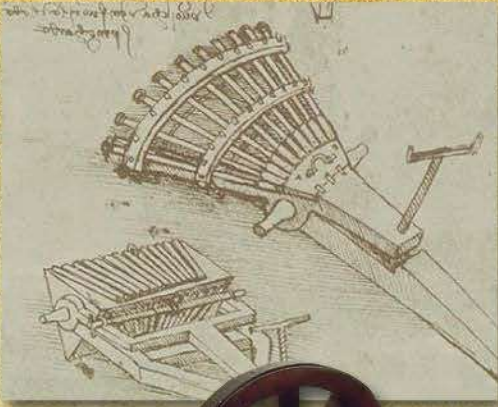


**WARSHIP, 1489:**

His ingenuity extended to land, sea and air. The warship – like the tank, below – could hit the enemy with a 360-degree arrangement of guns.

**MACHINE GUN, 1482:**

Precision was one of the key words behind da Vinci's advanced artillery. The height and angle of the gun could be adjusted so that the barrels pointed precisely at the target. Users could choose to fire single shots or all ten barrels at once.



Altitude was adjusted by a crank.

The ten guns were loaded through a single hatch.

Soldiers could keep watch from the tank's turret.



**TANK, 1485:** Da Vinci's armoured vehicle was designed to roll across the battlefield on four wheels without exposing a single weak point. Behind the cone-shaped shield, up to eight men would operate the guns as they propelled the tank forward.

40 guns were designed to engage enemies from all angles.





>> VI's infamous illegitimate son Cesare Borgia. If the famous philosopher Niccolò Machiavelli is to be believed, Leonardo was now developing military engineering for the Devil himself. The violent tyrant planned to seize power throughout Italy, and Leonardo, as his chief engineer and architect, was sent from town to town to develop canals and fortifications. But his sketches probably remained on the drawing board. In any case, modern historians know of no buildings or major constructions by da Vinci anywhere in Italy. What is certain, however, is that Leonardo returned to Florence, where he began to immerse himself in painting again.

### THE ENIGMATIC SMILE

One of his next works was to become the subject of conjecture, analysis and one of the most spectacular art thefts of all time. In 1503, Leonardo da Vinci laid the first brushstrokes on a panel of poplar wood, eventually drawing forth a dark-haired woman with an inscrutable smile. Whom the *Mona Lisa* depicts has since become the subject of much speculation. Some claim that da Vinci hid a self-portrait behind the enigmatic female figure. Others believe that he immortalised the wife of the Florentine merchant Francesco del Giocondo in the famous painting.

Today, art historians explain that part of what makes the *Mona Lisa* unique is the almost blurred effect of the painting. This is due to Leonardo's mastery of techniques such as *sfumato*, which directly translated means smoked. With this technique, he applied a softening veil over the corners of the eyes and mouth – the places on the face where facial expressions are most clearly



Da Vinci's world-famous motifs have been reused on coins, stamps and more.

identified. It left a smile that has variously been called sinister, haunting and seductive. The artist's advanced light and shadow techniques created the painting's alluring sense of depth and perspective, while the woman's pose, in which her body is turned, gives the illusion of movement. Perhaps this painting was not finished either. In any case, Leonardo kept it by his side until his death in 1519.

### DA VINCI MAPPED THE BODY

Studies of everything between heaven and earth continued alongside da Vinci's painting. In 1505, the artist wrote a short treatise on the mechanics of bird flight. But the biomechanics of the human body also attracted his attention.

Art and science intertwined as he carved up cadavers to map muscles and bones down to the last detail. Believing that one must paint from the bones outward to understand a figure, he delved into anatomy, leaving sketches of everything in his path: skulls, cartilage, tendons and even an unborn foetus in a dead woman's womb. The draft of a book on his anatomical discoveries was, like so much else, left unfinished.

While other artists, such as Raphael and Michelangelo, enjoyed the spotlight, 60-year-old

Leonardo become more of a peripheral figure on the Italian art scene. He was also forbidden by the Church from continuing his anatomical studies on humans, and had to make do with examining the corpses of animals instead.

Fortunately, employers outside Italy craved Leonardo's talent – especially the French rulers. King Louis XII had long tried to acquire *The Last Supper*, which he greatly admired. And when his successor, King Francis I, sent for Leonardo, the Italian painter accepted the invitation. In the summer of 1516, the ageing artist arrived at the Cloux estate in the Loire Valley, close to the French royal palace of Amboise, and was solemnly appointed first painter, architect and engineer to the king. Sketches for a new royal castle and a canal through the Loire Valley were drawn up, but the plans never made it to fruition. The 65-year-old artist's body was plagued with aches and pains, and one hand hung limply from his arm. In all likelihood, he stopped painting around this time.

### NOTES DISAPPEARED FOR 362 YEARS

Leonardo da Vinci died on 2nd May 1519 without leaving behind any public work other than *The Last Supper* in the convent of Santa Maria delle Grazie, the paint of which was already cracking. Most of his other works had been left to his apprentice Francesco Melzi, who in 1550 wrote a treatise that brought together the notes his master had catalogued under the heading "On painting". However, it wasn't officially published until 1817. Melzi's inheritance ultimately passed from hand to hand, until



The coded writing in the Voynich manuscript has not yet been deciphered.

## VOYNICH MANUSCRIPT

In 1912, bookseller Wilfrid M Voynich bought a book from a Jesuit monastery in northern Italy. It revealed 230 pages filled with drawings and coded writing written from right to left. Although a carbon-14 test dates the book to between 1404 and 1438, some researchers still believe da Vinci was behind the mysterious manuscript.



**BOTANY:** One section of the book is illustrated with plants – one on each page. Which herbs and flowers they depict is unknown, but the style is reminiscent of other European botany books from the same period.

**BIOLOGY:** Certain chapters seem to deal with the mechanisms of the body. They are illustrated with drawings of naked bathing women in lakes whose shape resembles a womb. The naïve style is a far cry from da Vinci's detailed and sophisticated studies of the human body. And according to academics, this is strong evidence that the Voynich manuscript was not written by da Vinci.



“One must paint from the bones outward to understand a figure.”

the sculptor Pompeo Leoni attempted to gather da Vinci's notes into two large volumes, which are now referred to as the *Codex Atlanticus* and the *Windsor Collection*, towards the end of the 16th century. However, many of the artist's sketches, notes and paintings were scattered to the winds, and it would take close to 300 years to reassemble them from various libraries and private collections across Europe. In fact, it wasn't until 1881 that the notes were finally published in a comprehensive form.

Reproductions of da Vinci's paintings by his pupils and later artists have puzzled art historians. Only in the twentieth century did they agree on the 12 paintings that could most likely be attributed to Leonardo. But even today, historians are not sure whether there are more da Vinci works waiting to see the light of day.

As recently as 2010, a group of scholars claimed to have found a series of tiny letters in the enigmatic *Mona Lisa*'s pupils – LV in the right and CE in the left – but what the painter meant by these characters remains to be seen. Just as it's a mystery whether there was any meaning behind da Vinci's mirror writing, or whether he simply wrote backwards because he was left-handed. ■

Historians believe the painting is a self-portrait of da Vinci, but no one knows for certain. The genius revealed little about himself.

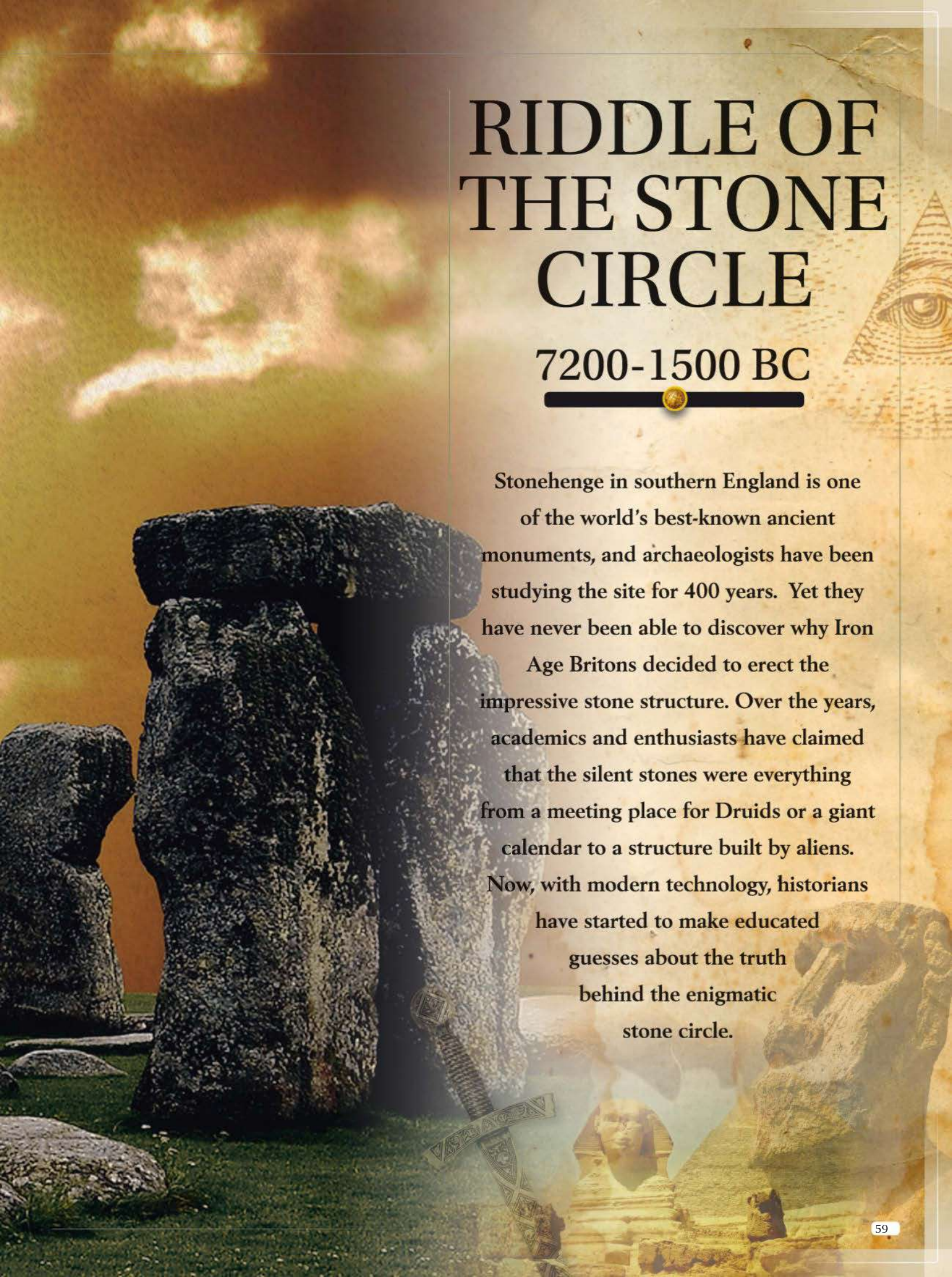


▲ **ASTRONOMY AND ASTROLOGY:** The sun, moon, stars and diagrams resembling astrological charts adorn the pages of the Voynich manuscript. However, based on what researchers know about medieval astrology, no one has been able to decipher either the diagrams or the coded writing around them.









# RIDDLE OF THE STONE CIRCLE

7200-1500 BC

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Stonehenge in southern England is one of the world's best-known ancient monuments, and archaeologists have been studying the site for 400 years. Yet they have never been able to discover why Iron Age Britons decided to erect the impressive stone structure. Over the years, academics and enthusiasts have claimed that the silent stones were everything from a meeting place for Druids or a giant calendar to a structure built by aliens. Now, with modern technology, historians have started to make educated guesses about the truth behind the enigmatic stone circle.



# 7200-1500 BC

**7200 BC**

The first people settle on Salisbury Plain.

**3000 BC** Stone

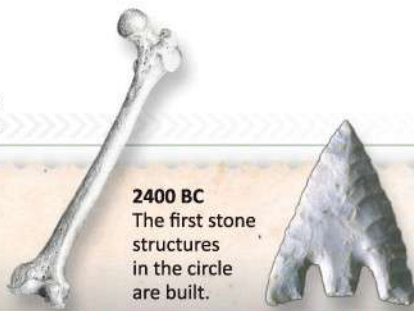
Age Britons build the first earthwork at Stonehenge.

**2400 BC**

The first stone structures in the circle are built.

**1500 BC**

Stonehenge is completed in the form we know today.



**S**tonehenge in the county of Wiltshire in southern England is without doubt one of the world's best-known prehistoric monuments, but also one of the most enigmatic.

"The more we dig, the more the mystery appears to deepen," said archaeologist William Hawley shortly before World War II – and so it remains today.

Despite countless excavations, archaeologists have yet to fathom the purpose of the unique structures of tall, upright boulders with heavy lintels that rise silently above the green grasslands of Salisbury Plain.

The medieval Anglo-Saxons had no idea what Stonehenge was used for, and since the seventeenth century, the site has been studied again and again, and new theories have emerged. Nineteenth-century Victorians made Stonehenge part of their own romantic mythology of the British Isles' uniqueness, while modern-day historians and fantasists have associated the monument with everything from sun cults to spacemen.

## BUILT WITH SIMPLE MEANS

Stonehenge is considered the most labour-intensive of Britain's Stone Age monuments. The transport alone of the tonnes of stone that make up Stonehenge

required enormous muscle power and high-level engineering skills. The size of the stones is particularly impressive when you consider that the area around Salisbury Plain was sparsely populated by small farmers with only simple tools at their disposal during the transition between the Stone and Bronze Ages.

Archaeologists have found no evidence that ancient Britons had a numerical system or a written language – unlike the Egyptians, who at the same time were building the mighty funerary pyramids of the pharaohs.

Stonehenge's name probably derives from the Saxon *stan-hengen* – stone hanging.

## THREE GROUPS OF PEOPLE

Stonehenge has a long and complicated history, and the dates are still being refined, but in general, historians believe the monument was constructed in five stages by three different ancient peoples.

The Windmill Hill Stone Age people built the original circular earthwork around the monument in approximately 3000 BC.

These people were made up of local tribes and settlers from eastern England and are named after a nearby mound. They brought a love of symmetry and circles with them to Salisbury, where they used crude shovels fashioned from the shoulder blades of oxen to build the earthwork and excavate the ditch that also surrounds the monument. The construction required an

enormous amount of work, but it's not hard to imagine how it was done. Earth was collected in baskets and carried away, and modern reconstruction trials have shown that the process was surprisingly efficient.

Around 2000 BC, the Beaker people settled in the area. They were responsible for the next phase of construction, when the famous giant stones were added. The Beakers probably came from mainland Europe and are named after the many clay drinking cups – beakers – they left behind and often had buried with them. Academics believe that the Beakers were sun worshippers and that they had developed a more advanced understanding of mathematics and geometry than the Windmill Hill people, which they used to build Stonehenge. They also made use of bronze tools such as knives, unlike the Windmill Hill people.

The last group to leave their mark on Stonehenge were the Wessex people. This group migrated to the area around 1500 BC, when the Bronze Age was flourishing. Unlike their settled predecessors, the Wessex were traders and travellers, who in time came to dominate the whole of southern England. Finds testify to a culture that traded extensively, with a tradition of richly decorated burial grounds.

The Wessex may have had one or more ambitious petty kings who could have been the driving force behind the repeated extensions of Stonehenge.

## STONES WERE QUARRIED IN WALES

Neither the Beakers nor the Wessex knew about the wheel, and archaeologists have still not fully established how they managed to transport the boulders from the remote quarries to the green plain near Salisbury.

The most common assumption is that the builders placed greased wooden rollers under the stones, which were slowly and painstakingly pushed and pulled to Stonehenge. Others have speculated that

## CONSTRUCTION

### STONEHENGE WAS BUILT IN FIVE STAGES

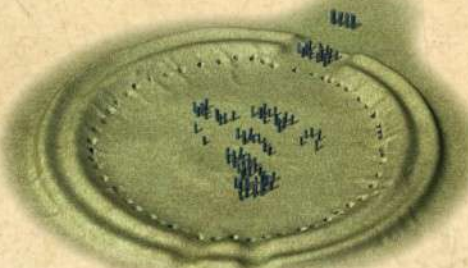
**W**hile archaeologists have never been able to determine what purpose Stonehenge served, they have been able to date the monument using mineral analysis of the stones and carbon-14 testing of organic matter found at the site. Laboratory work has shown that the impressive monument was built in several stages over a period of around 1,500 years – from the first relatively modest earthwork to the imposing monument of massive stones we know today.

**1** The oldest part of Stonehenge dates from around 3000 BC and consists of a circular earthwork and a ring of holes in the ground, some of which contained the remains of cremated bodies. The opening of the circle faces north-east and sunrise on the summer solstice.

North-east



**2** During the first few hundred years, the monument was extended with a series of wooden stakes, the holes of which have been discovered by archaeologists. The stakes may have been anything from totem poles to parts of buildings that may once have stood in the middle of the circle.





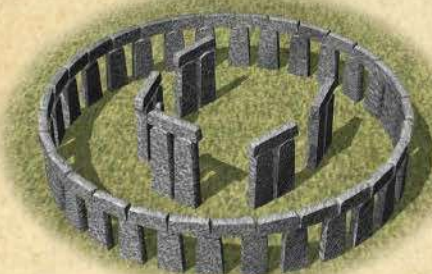
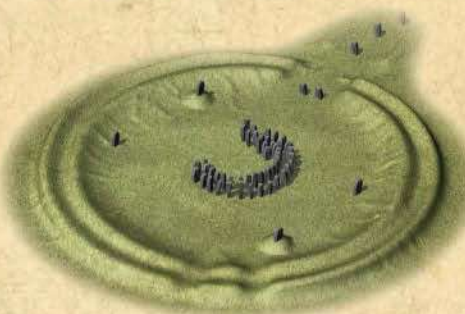


Although Stonehenge has been heavily damaged since the Bronze Age, the circular shape of the monument is still evident from the air.

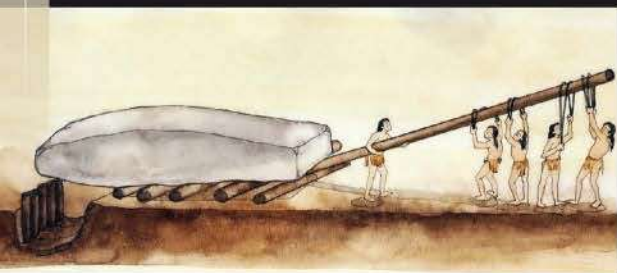
**3** Around 2400-2200 BC, Bronze Age people added a double semicircle to the monument, made from the special bluestones they transported to Stonehenge from the Preseli Hills in Wales, 250 kilometres away. Historians are still guessing at the reason.

**4** In the same period, the people of Salisbury Plain built perhaps the best-known part of Stonehenge, the circle of giant sandstones with a horseshoe of even bigger stones in the middle. The stones weighed more than 25 tonnes each and came from a quarry 30 kilometres away.

**5** Eventually, the Bronze Age builders moved the many bluestones from Wales around several times before finally placing them in a faithful replica of the large sandstone arrangement: a circle within the circle and a horseshoe within the horseshoe.



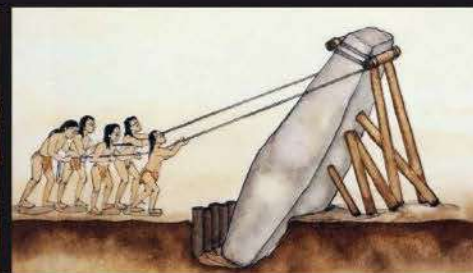




The giant boulders were probably moved on greased wooden rollers and tilted into holes that the Stone Age people had dug in advance.



By building a support under the stone and gradually tilting it higher and higher, Stonehenge's builders could slowly raise a giant boulder.



Eventually, the stone could be raised to its final vertical position using ropes and muscle power.

## STONEHENGE'S CIRCLE WAS MARKED BY A COMPASS

Stonehenge's symmetrical and circular design shows that the Stone and Bronze Age southerners had a thorough knowledge of geometry. Academics believe that the stones were placed by means of a rope attached to a point at the centre of the circle – the same principle used in a pair of compasses today.

The outer ring was connected by metre-thick, barrel-shaped and slightly curved lintels. The ring was originally unbroken, and the lintels were fixed like Lego blocks – studs at the top of the circle's giant sandstone blocks fitted into holes carved into the lintels.

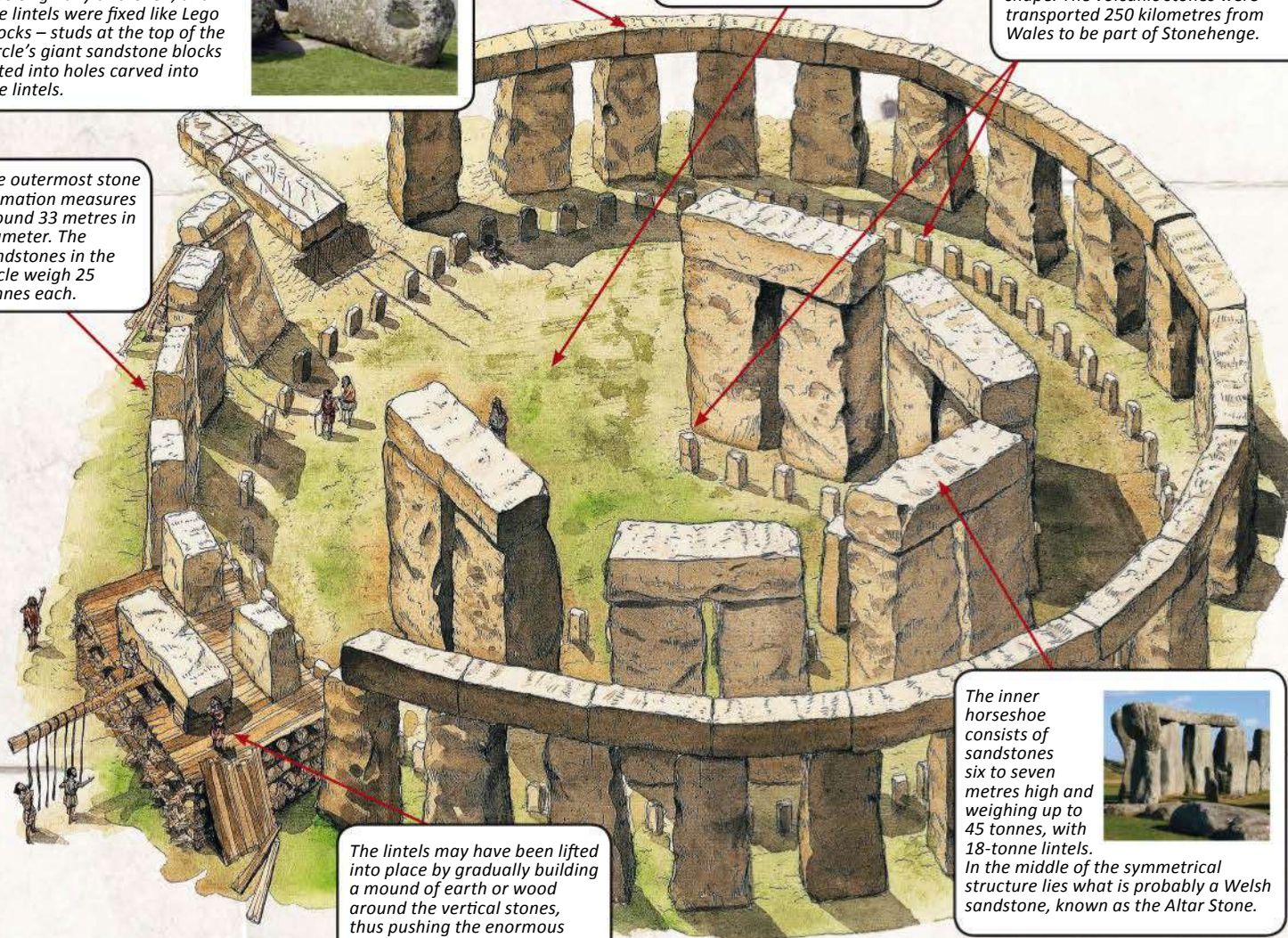


The innermost semicircle opens on to the summer solstice sunrise and a road leading down to the River Avon. Archaeologists have named it Stonehenge Avenue.



Two-metre-high bluestones copy the large sandstone circle and horseshoe shape. The volcanic stones were transported 250 kilometres from Wales to be part of Stonehenge.

The outermost stone formation measures around 33 metres in diameter. The sandstones in the circle weigh 25 tonnes each.



The lintels may have been lifted into place by gradually building a mound of earth or wood around the vertical stones, thus pushing the enormous stones into place.

The inner horseshoe consists of sandstones six to seven metres high and weighing up to 45 tonnes, with 18-tonne lintels. In the middle of the symmetrical structure lies what is probably a Welsh sandstone, known as the Altar Stone.





>>>> the workers used a kind of sledge that was dragged over a track of animal fat.

The largest of the rocks, the sarsen stones, weighing up to 50 tonnes, were quarried at Marlborough Downs nearly 30 kilometres north of Stonehenge. In 1995, a 100-strong team of researchers managed to drag a 40-tonne stone from the quarry to Stonehenge using the sledge and animal fat technique. The team then raised the stone by digging a hole over which the giant stone was pushed until it literally fell in. The team of enthusiasts could then push and pull the stone into place.

The lintels of the outermost stone circle and the giant horseshoe in the middle of the monument may have been pushed up an earthen or wooden ramp built for the occasion. Once they were raised to the level of the vertical giant stones, they were fixed in place with a mortise and tenon joint – tenons, or projections, in the vertical stones fitted into mortises, or holes, in the lintels. The builders had also cut notches in the lintels so that they slotted together.

The erection of the bluestones, which also form part of the layout, is easier to explain because the stones are not nearly as large. On the other hand, their journey to Stonehenge covered ten times the distance, because for some unknown reason they were quarried 250 kilometres away in the Preseli Hills in west Wales. The stones were probably sailed across lakes and along rivers before being dragged overland to their destination on Salisbury Plain.

#### CIRCLE WAS FORGOTTEN

Stonehenge probably stood on Salisbury Plain for many hundreds of years until, with the Roman invasion of 43 AD, the site lost its purpose and importance.

Several of the ancient Stone Age structures were toppled, either during the Roman occupation of Britain or in the early Middle Ages, and after the advent of Christianity in the British Isles, the Church regarded the monument as a pagan and diabolical work. It is possible that monks even vandalised the monument in the first millennium AD.

Medieval legends linked Stonehenge to the wizard Merlin and the mythical King Arthur and his Knights of the Round Table. The tales said that a giant had built

## “ The erection of the many bluestones is easier to explain. ”

the monument on the wizard's orders, or he magically transported it from the mythical Mount Killaraus in Ireland. While these stories were being told, Stonehenge was deteriorating further and further.

#### HISTORIAN GUESSED AT DRUIDS

In the seventeenth century, the once-formidable stone structure lay in ruins while historians debated whether it had been built by Romans, Saxons or Danish Vikings. Everyone was convinced that the ancient Britons couldn't possibly have built something so grand themselves. But then John Aubrey, an archivist from west Wiltshire, took an interest in the monument, and in 1663, he received royal funding to make the first thorough archaeological survey of the site.

Aubrey's studies of Stonehenge led him to conclude that the circle's builders could not have been Roman, Viking or any other invader. Stonehenge was too similar to other stone circles found around the British Isles, where conquerors had never set foot. The resemblance proved Stonehenge was British, Aubrey correctly concluded.

Aubrey imagined that the complex was built by Britain's original inhabitants, the Celts, and in a flurry of speculation about Stonehenge, launched a theory that would gain widespread currency after his death: Stonehenge was used by the Celtic priesthood, the Druids, for ceremonial acts.

Perhaps the greatest proponent of the Druid theory was the archaeological

pioneer William Stukeley, who carried out extensive surveys and excavations at Stonehenge in the early 1720s. He gradually became so absorbed in his studies of Druids that he began to perform some of the rituals of the ancient Celtic priests himself. When his wife gave birth to a stillborn child, he buried the foetus in his back garden in “ceremonys proper to the occasion”, as he wrote.

Druid enthusiasts like Stukeley were wrong about Stonehenge's builders – but it was nonetheless true that the monument had at times been important to Celtic Druids. Indeed, on rare occasions they used the ancient Stone and Bronze Age structure as a sacrificial temple, although they tended to hold their ceremonies in marshlands and forests.

#### STONES MEASURED SEASONS

William Stukeley was the first to discover, during his surveys and excavations, that Stonehenge's horseshoe shape opens towards the sunrise on the summer solstice. Stukeley himself interpreted his discovery as a sign that the Celts used Stonehenge when they worshipped the sun – but his discovery also became the inspiration for one of the twentieth century's best-known

*A photo from the nineteenth century shows Stonehenge in serious disrepair.*







In the nineteenth century, many people imagined ceremonies led by Celtic chiefs or Druids at Stonehenge. A few even found space for the tablets of the Ten Commandments (in the foreground) in their pictures of the circle. What the theories had in common was that they were all far removed from reality.

theories about the monument on the Salisbury Plain.

In 1965, British scientist Gerald S Hawkins developed what is known as an archaeoastronomical theory that linked Stonehenge directly to the sun – albeit in a different way from how Stukeley imagined. Using his 1963 IBM 7090 computer, Hawkins identified 165 points in and around Stonehenge that could be used to construct a possible solar calendar. Stonehenge, Hawkins postulated, was simply a giant Stone Age calendar.

#### PART OF HUGE STRUCTURES

Hawkins's calendar theory, however, is just one of many modern ideas about what Stonehenge was used for. Other historians have suggested that the site was more likely a meeting point for a vast alliance of Stone and Bronze Age tribes, and as new excavations of the area continue, fresh theories about the monument are emerging.

The last 400 years of research have revealed traces of a number of Stone Age structures in the region, less conspicuous

but just as impressive as the seven-metre-high stone construction at the centre of the Stonehenge site.

The area includes giant earthworks such as Durrington Walls and the North Kite, as well as hundreds of burial sites. North of the circle is a double monument that early British archaeologists dubbed the Cursus, as they thought it resembled a Roman racecourse, and from the River Avon an ancient road called Stonehenge Avenue stretches three kilometres across the plain to Stonehenge. In all, UNESCO has designated no fewer than 2,600 hectares around the monument as a World Heritage Site.

#### BLUESTONEHENGE EMERGED

Since 2003, the researchers behind the extensive Stonehenge Riverside Project archaeological dig have been trying to fit this entire sprawling site into one coherent theory.

The archaeologists' central thesis is that Stonehenge was the setting for burial ceremonies for the Stone and Bronze Age

Britons who lived in the giant settlement, which at the time was enclosed by the Durrington Walls, situated to the north-east of Stonehenge.

Several findings from the excavations have been shown to support this hypothesis. At Durrington Walls, researchers found a 167-metre-long paved road leading down to the banks of the River Avon. The archaeologists estimate that the road was used for funeral processions. From Durrington Walls, the dead were carried along the road down to the Avon and sailed to a point further down the river, approximately 1.5 kilometres from Stonehenge.

There, on the riverbank, the Stonehenge Riverside Project made its most important discovery yet: holes for a miniature Stonehenge. The excavations showed that this stone circle had originally been built from Welsh bluestones, which is why the researchers immediately named it Bluestonehenge.

Here, it is theorised, less important people were cremated and their ashes probably scattered in the river, while the remains of more prominent citizens were carried further to Stonehenge – the end of the long journey to the afterlife.

In addition to the Stonehenge Riverside Project's own findings, the theory is supported by the many burial mounds found in the area and human bone remains excavated near Stonehenge.

#### ARCHER WANTED TO BE HEALED

Alongside the Stonehenge Riverside Project, other excavations have lent credence to an entirely different theory of Stonehenge: rather than a place to help the dead safely reach the afterlife, Stonehenge experts Timothy Darvill and Geoff Wainwright say it was a place of pilgrimage for the living to be cured of all manner of physical ailments.

The professors point to the many bluestones that Stonehenge's builders dragged 250 kilometres from Wales to Salisbury Plain in England. Only a firm belief that the stones had magical, healing powers could have made the ancient Britons go to such lengths to build a stone monument, they argue.

The healing theory is supported by the fact that a very large proportion of the human bones found by archaeologists at the foot of the mighty boulders bear signs of physical injury.

In 2008, Darvill and Wainwright's archaeological excavations at Stonehenge provided further support for their hypothesis of it being a site of healing.

By analysing the organic remains at the bottom of the old bluestones' settings, the two professors were able to make the first precise dating of the stones' arrival at Stonehenge. The laboratory work showed that the bluestones were first placed there between 2400 and 2200 BC.

This is exactly the same period that a very important person lived on Salisbury Plain – the gentleman known today as the

**56 huge**  
chalk pits  
surround  
Stonehenge –  
called Aubrey  
holes after  
the man who  
discovered them.

#### MEANWHILE IN FRANCE

##### STONES SPRANG UP

Stonehenge is probably the best-known megalithic structure in the world, but related structures are known in many parts of the globe, not least in neighbouring France. What they have in common is that they were built between the Late Stone Age and the Copper Age – 4500-1500 BC. Some of the most impressive can be found around Carnac in Brittany, such as the Dolmen de Crucuno burial ground (left) and the nearby parallel rows of huge monumental stones that stretch almost five kilometres through the Breton countryside.





Archer of Amesbury. He was found in 2002, just five kilometres from Stonehenge, in the most lavishly decorated Bronze Age tomb ever excavated by archaeologists in Britain.

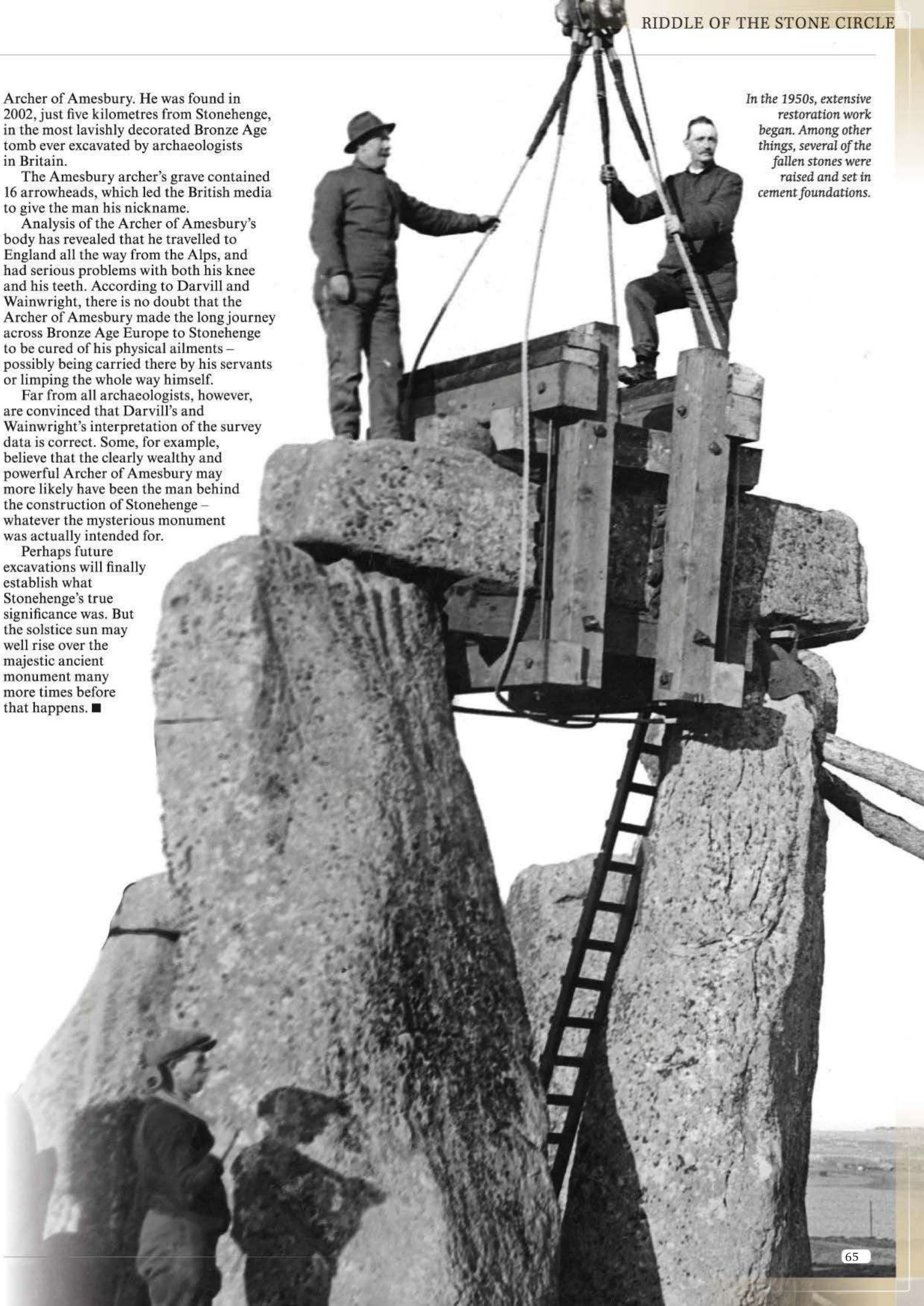
The Amesbury archer's grave contained 16 arrowheads, which led the British media to give the man his nickname.

Analysis of the Archer of Amesbury's body has revealed that he travelled to England all the way from the Alps, and had serious problems with both his knee and his teeth. According to Darvill and Wainwright, there is no doubt that the Archer of Amesbury made the long journey across Bronze Age Europe to Stonehenge to be cured of his physical ailments – possibly being carried there by his servants or limping the whole way himself.

Far from all archaeologists, however, are convinced that Darvill's and Wainwright's interpretation of the survey data is correct. Some, for example, believe that the clearly wealthy and powerful Archer of Amesbury may more likely have been the man behind the construction of Stonehenge – whatever the mysterious monument was actually intended for.

Perhaps future excavations will finally establish what Stonehenge's true significance was. But the solstice sun may well rise over the majestic ancient monument many more times before that happens. ■

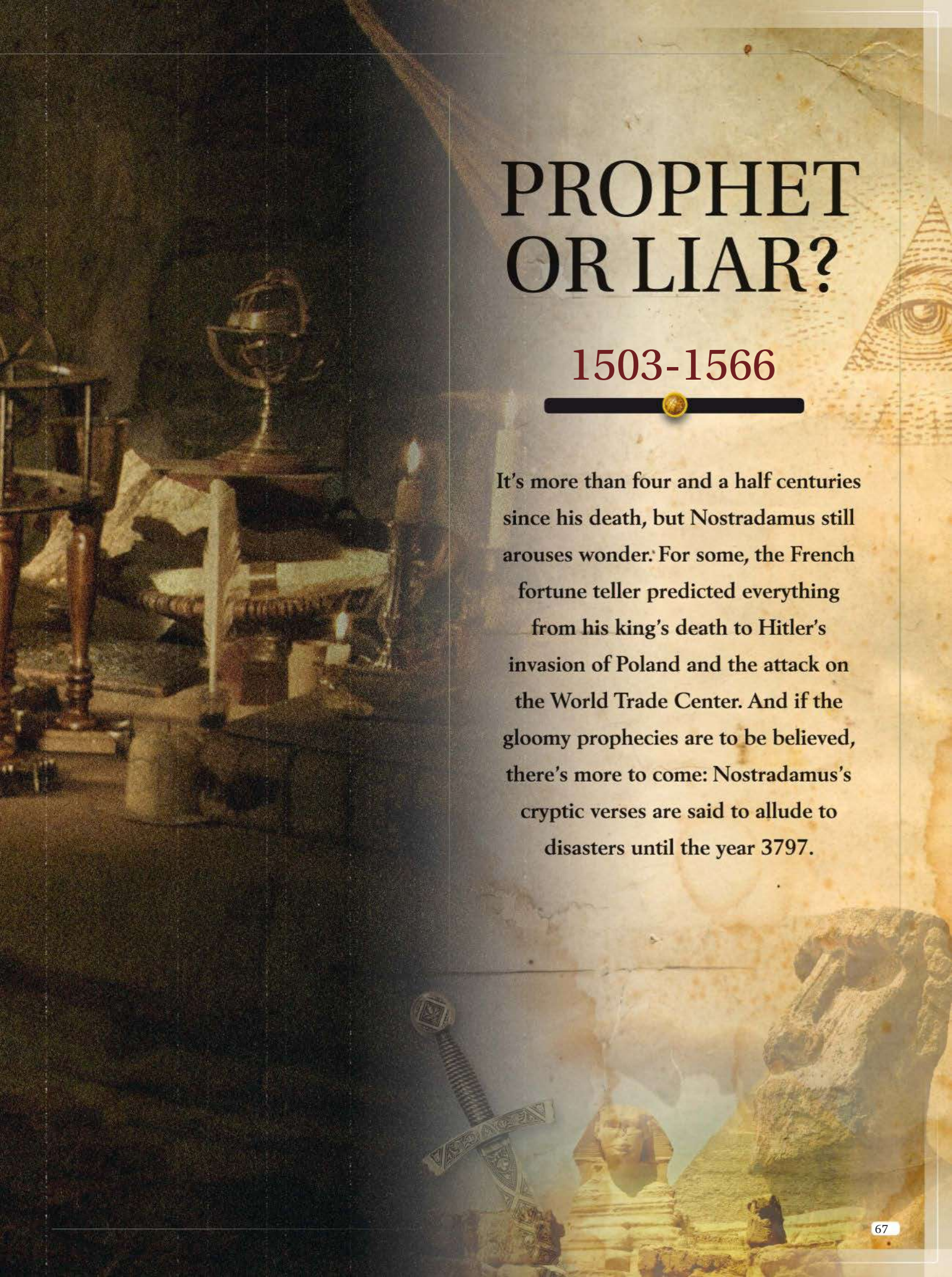
*In the 1950s, extensive restoration work began. Among other things, several of the fallen stones were raised and set in cement foundations.*











# PROPHET OR LIAR?

1503-1566

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It's more than four and a half centuries since his death, but Nostradamus still arouses wonder. For some, the French fortune teller predicted everything from his king's death to Hitler's invasion of Poland and the attack on the World Trade Center. And if the gloomy prophecies are to be believed, there's more to come: Nostradamus's cryptic verses are said to allude to disasters until the year 3797.



## 1503-1566

**1521**  
Nostradamus hits the road as a travelling herbalist.

**1549** The first in his series of almanacs goes to the printers.



**1555** The diviner's most famous work, *The Prophecies*, is published.



**1559** Death of Henry II: Nostradamus earns fame as a prophet.

1521 >>> 1549 >>> 1555 >>> 1559 >>>

The light flickered faintly in the cramped attic. On the floor and table were stacks of books on astrology, medicine and alchemy. Beside them stood a brass tripod, and in the midst of it all sat the long-bearded Michel de Notredame, scribbling down his divinations in ink.

At least, that's how the French fortune teller set the scene when recounting his nights of divination at his modest home in Salon-de-Provence, southern France, where he spent hours studying the positions of the planets. Using cryptic language, he foretold events thousands of years into the future, including the 942 quatrains that have ensured his immortality. The verses were collected in what is now his most famous work, *Les Propheties* (*The Prophecies*), which some claim predicted everything from the death of King Henry II in 1559 to the atomic bombing of Hiroshima in 1945 and the attack on the World Trade Center in New York on 11 September 2001.

### BORN IN PRE-PLAGUE EUROPE

The now famous fortune teller was born Michel de Notredame on 14 December 1503 in St-Rémy-de-Provence, France. Some 44 years later, de Notredame would adopt the Latin-sounding pseudonym Nostradamus. But back in 1503, there was no reason to expect a grand future for the newborn.

In the same year as Nostradamus was born, Columbus crossed the Atlantic for the fourth time and a young Martin Luther was about to graduate from the University of Erfurt in Germany. At the same time,

the Black Death was sweeping across Europe, sending 75 million people to an early grave. No one knew why. Superstition flourished and the Inquisition mercilessly condemned heretics.

Little is known about Nostradamus's young life: he was the son of a merchant and of Jewish descent. Europe in the Middle Ages was home to many anti-Semites who were quick to blame the Jews for the Black Death. In France, where Judaism had been officially outlawed in

"We know from Nostradamus's notes that as a youth he spent eight years travelling around southern Europe"

1394, Christians tried to root out all Jews. For those persecuted, the most obvious solution was to convert to Christianity, and Nostradamus' grandparents did just that.

Nostradamus was educated by his great-grandfather, who was fascinated by astrology. It's likely that Nostradamus's curiosity

about the power of the planets was sparked at this time as he spent hours in lessons with his great-grandfather and walking around the local Roman ruins with him.

Jean-Aimé de Chavigny, who was Nostradamus's secretary before his death, wrote that Nostradamus's great-grandfather bestowed on his master an astrolabe to calculate the stars' positions as well as a taste for "the celestial sciences".

### A TRAVELLING HERBALIST

Nostradamus soon decided to follow in his great-grandfather's footsteps. Some historians believe that he was just 15 when he enrolled at the University of Avignon to study medicine – a science that in the 16th century relied heavily on astrology. He was forced to stop, however, when the plague



The French prophet lived at the time of Europe's Inquisition and had to hide his Jewish heritage.

closed the university in 1520. Other academics argue that the Frenchman entered the university later.

We know from Nostradamus's notes that as a youth he spent eight years travelling around southern Europe as an apothecary of sorts. From 1521 to 1529, he studied "natural remedies across various lands and countries, constantly on the move to hear and find out the source and origin of plants and other natural remedies involved in the purposes of the doctor's craft".

Like many descended from Jews in medieval Europe, he journeyed around the continent with concoctions of herbs and minerals that, in Nostradamus's own words, could cure ailments as diverse as hair loss, potency problems and gallstones.

### TRAINED AS A MEDIC

The University of Montpellier's ancient records show that Nostradamus enrolled in the Faculty of Medicine in 1529. This was a highly respected institution, where the Church's usual ban on dissecting corpses did not apply. But despite the university's apparently scientific approach to healing, astrology was a key part of the curriculum. Divination was still very much a part of medicine and many lecturers believed that every part of the body was ruled by a sign of the zodiac. Circles and horoscopes were as important as knives and boiling water in curing ailments. It was not unusual, therefore, for doctors also to offer astrological predictions and for medieval Europeans to take horoscopes as seriously as medical advice.

Exactly when Nostradamus finished his studies is not known for sure. Documents suggest that he may have been expelled from school. He did stay long enough to get his licence to practise medicine, however, after which he settled in the southern French town of Agen.

There, Nostradamus married and had two children, but it wasn't long before the young family was destroyed by the bubonic plague, which was coursing through Europe again. The loss of his young wife

#### TECHNOLOGY.....

#### CULTURE.....

#### ECONOMY.....

#### DAILY LIFE.....

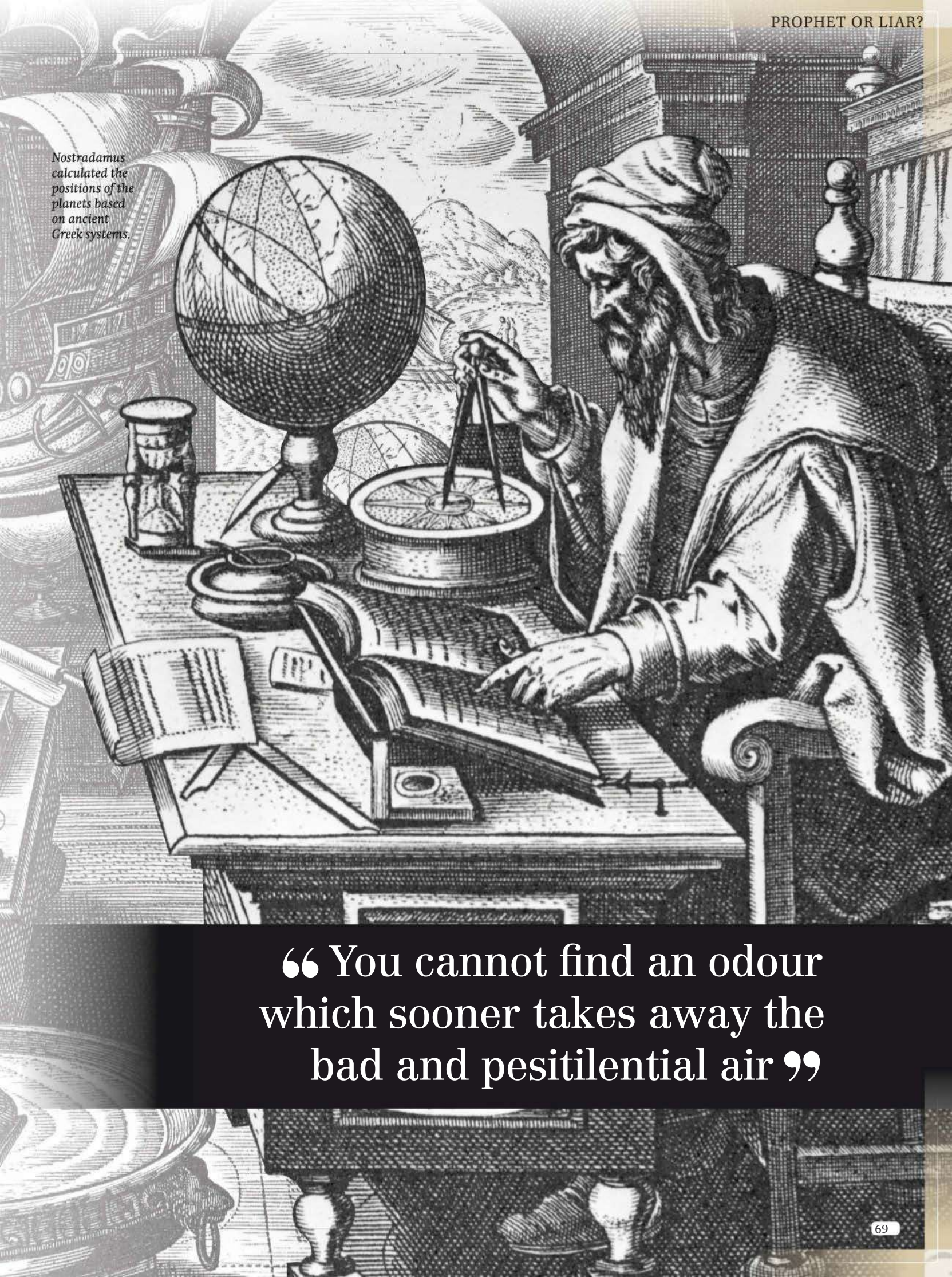
### Printing press spread the word

When Nostradamus had his first almanacs printed in the 1550s, Gutenberg's printing press had about 100 years of development behind it. The invention was crucial to Nostradamus's career because it made his calendars and horoscopes

easily accessible to a wide range of readers. Printing presses were still relatively rare in Europe in Nostradamus's time, so the fortune-teller had to send his almanacs by courier from his home town of Salon to Lyon to get them published.







Nostradamus calculated the positions of the planets based on ancient Greek systems.

“ You cannot find an odour  
which sooner takes away the  
bad and pesitilential air ”



CATHERINE DE MEDICI 1519-1589

## THE SUPERSTITIOUS QUEEN

■ The French queen Catherine de Medici had a decisive influence on Nostradamus's career when she made him court prophet in 1559. She was born in Florence on 13 April 1519, married Henry II of France and gave birth to three of the country's kings. Unlike her husband, she was fascinated by astrology

and read Nostradamus's 1555 almanac in which he wrote about the fate of the royal family. The queen soon joined the ranks of his greatest admirers. After Henry II's death in 1559, the couple's son was anointed king, but Catherine pulled the strings until her death on 5 January 1589.

*Queen of France – Mother of three kings of France – Admirer of Nostradamus*



>>>> and two infants had a decisive impact on the physician's life.

### ROSE PILL AGAINST THE PLAGUE

Nostradamus took to the road again – probably to fight the plague that had taken his family. He went to Narbonne, Toulouse and Bordeaux, and everywhere he saw the Black Death creeping into people's homes. The markets were closed and the churches had locked their doors. In the stinking streets, men, women and children coughed up blood and writhed in agony. No one, not even Nostradamus, could fathom how the plague struck and spread, but the itinerant medicine man was determined to find a cure for the pestilence.

During his travels, he patiently collected rosebuds, which he crushed in his marble mortar, along with cloves, aloes and other ingredients. The powder was mixed with sawdust, pressed as a lozenge and sold as a miracle cure for the Black Death.

"In times of pestilence, put it in the mouth often. You cannot find an odour which sooner takes away the bad and pestilential air," he wrote of the rose pill.

In 1547, the now experienced medic married for a second time and settled in the town of Salon.

### THE PREDICTIONS BEGAN

Once established in Salon, Nostradamus began to immerse himself in astrology. Day by day, he calculated the positions of the planets using astrological tables and then set about predicting how the planets' alignment would influence matters on Earth. His forecasts included astronomical

events, such as solar and lunar eclipses, along with personal fortunes and tragedies.

From 1549, he started to put his observations together in an almanac, which chronicled the most important events for the coming year. The almanac was divided into three parts: an astronomical section, a calendar giving the days of the year and a final part with predictions that were comparable to the horoscopes found in today's newspapers and magazines. Although almanacs were already widely used in the Middle Ages, Nostradamus's yearbook quickly became popular. France was a superstitious country, and it wasn't long before Nostradamus was known far and wide.

The astrologer also began writing other books. For example, in 1552 he published *Treatise on Cosmetics and Jams*, which was inspired by his travels and included recipes for perfumes and jams.

But according to Nostradamus, his abilities extended beyond making preserves and predicting the coming year's weather. By comparing the past and future positions of the planets, he believed he could predict events as far ahead as the year 3797.

### VEILED VERSES

In May 1555, he published the first volume of the work that has made him an enigma to this day: *The Prophecies*. The book consisted of the first 353 of a total of 942 prophecies. These were written in the form of quatrains (four-line verses) and hinted at

coming droughts, famines, power-hungry rulers, floods and war.

But the verses have never been easily deciphered. Nostradamus himself spoke of them being "covered with a veil of cloud, [but] ... clear enough to be comprehended by men of good intelligence".

Specific years were omitted, and there's no chronological order to the predictions. The language used alternates seamlessly between French, Latin, Greek and Occitan. The wordplay is also masked with anagrams. For example, Paris becomes Rapis. He also left out whole words and sentences.

The vague predictions have been interpreted and reinterpreted ad infinitum. A striking example of over-interpretation is seen in the following verse:

*Liberty will not be recovered,  
A proud, villainous, wicked black one will  
occupy it,  
When the matter of the bridge will be  
opened,  
The republic of Venice vexed by Hister.*

The word 'Hister' has been interpreted as 'Hitler', and the quatrain as a prediction of the Nazi invasion of Europe. But Hister is the medieval name for the River Danube – and the prediction more likely relates to a new Hun invasion of Europe.

In his writings, Nostradamus also avoided strict formulations that could land >>>>

## GREATEST PROPHECIES

Some believe that Nostradamus's quatrains predict major events in world history. Others think that interpreting them in this way is fanciful, with the words often skewed to fit recent global events.

1666

**Fire of London:** "The blood of the just will commit a fault at London / Burnt through lightning of twenty threes the six / The ancient lady will fall from her high place / Several of the same sect will be killed." When large parts of the city – including St Paul's Cathedral – went up in smoke, it wasn't long before Nostradamus's quatrain 51 was unearthed as proof that the soothsayer had seen the fire coming.



1886

**The Statue of Liberty is built:**

"The newly elected master of the great vessel / He will see shining for a long time the clear flame / Which serves this great territory as a lamp." This prophecy supposedly foretold a glorious fate for the United States of America.





In The Prophecies, Nostradamus sets himself up as a Delphic oracle.



1939

**Hitler attacks Poland:** "Liberty will not be recovered / A proud, villainous, wicked black one will occupy it / ... The republic of Venice vexed by Hister." Hister, however, was an old name for the Danube.



1997

**The death of Princess Diana:** "The penultimate of the surname of the Prophet / Will take Diana for his day and rest."



1999

**The end of the world was interpreted from this verse:** "The year 1999, seventh month / From the sky will come a great King of Terror: / To bring back to life the great King of the Mongols / Before and after Mars to reign by good luck."

2001



**9/11 terror attack:** "At forty-five degrees the sky will burn / Fire to approach the great new city: / In an instant a great scattered flame will leap up." This allegedly refers to either New York's location near the 45th parallel or the angle at which the second plane hit the Twin Towers.

2001





Interest grew after the seer's death. This 1790 woodcut shows a woman seeking his advice.

him into trouble with the powers that be or the church. He always insisted that his prophecies came directly from God. He knew that if he fell out of favour with the Catholic Church, it could cost him his life. To further safeguard himself, Nostradamus dedicated his works to important people, including the French royal family.

Historians today refer to the obscure wording as a clever, thoughtful move by Nostradamus. The enigmatic wordplay makes it impossible to accuse him of being a fraud. The prophecies can fit any context the reader chooses to apply. All serious scholars agree, however, that the French soothsayer did not possess supernatural abilities, just a devious pen.

#### ROYAL INVITATION

Despite the obvious vagueness – or perhaps because

of it – word of Nostradamus's psychic powers soon spread through the villages of southern France. And before long, even the royal family became interested in the lowly doctor who could see the future.

In 1555, Nostradamus received an invitation from King Henry II, who wanted to see the now 52-year-old physician at court in Paris. Nostradamus had written a series of verses in his latest almanac, in which he warned of a danger to the royal family's line.

*A coffin is put into the vault of iron, where  
seven children of the king are held,  
The ancestors and forebears will come  
forth from the depths of hell,  
lamenting to see thus dead the fruit of  
their line.*

The 800-kilometre journey from Provence to Paris, which Nostradamus set out on, was marked by worries. Henry II took a hard line towards perceived heretics and the soothsayer feared that the king would cut off his head. But it was not to be. Historians believe that the queen, Catherine de Medici, who was deeply interested in astrology and the supernatural, fell for the seer's talents. Exactly what passed between the royals and Nostradamus, however, is unknown.

After his return from the capital, Nostradamus continued to write predictions. And because the royal family had sought his advice, customers

from all walks of life now knocked on his door. He was commissioned to make horoscopes and to advise on favourable business opportunities. Even priests sought out Nostradamus – despite the fact that his visions of the future were not wholly approved of by the Church.

Success wasn't universal, however. Some complained about Nostradamus's illegible handwriting and cryptic formulations. Not least his fellow astrologers. They, too, penned almanacs, and professional rivalry made them quick to accuse him of being sloppy in his calculations and of over-interpreting his results.

#### PREDICTED THE KING'S DEATH

Nonetheless, *The Prophecies* spread through Europe. By the late 1550s, they had been translated into Italian and English, among other languages. And just when many thought Nostradamus had reached the peak





of his popularity, a dire prediction from *The Prophecies* came true.

In 1559, King Henry II organised a knightly tournament for his daughter's wedding. In the decisive duel, the king faced the young Count of Montgomery. The duellists, armoured from head to toe, both had a lion emblem on their shield. They charged one another, but the count's lance broke and pierced Henry II's golden visor. A splinter from the lance went into the king's eye, while a second pierced his neck. The splinter in the eye travelled into the brain, and the king died ten days later.

Queen Catherine believed that there was a frighteningly precise connection between the accident and quatrain 35 of Nostradamus's *The Prophecies*:

**942** of the predictions in the *The Prophecies* have survived. It was first published in 1555-1558.

*The young lion will overcome the older one in a field of combat in single fight: He will pierce his eyes in their golden cage, two wounds in one, then he dies a cruel death.*

The verse had far-reaching consequences for Nostradamus. After the king's death, he became the most respected soothsayer of the age, and his almanacs sold in large numbers in France and England. He was so famous that forgeries of his almanacs even began to appear.

#### BECAME A NOTED SOOTHSAYER

Ever since Catherine's first meeting with Nostradamus, she had listened attentively to his predictions, and her faith in the soothsayer solidified following the king's death. During the 1560s, she appointed him royal court astrologer and adviser – a title of which he was extremely proud. The royal family sent for him whenever they needed their fortunes told or horoscopes read. In 1564, for example, he interpreted the planets for Rudolf II, Archduke of Austria and son of the Holy Roman Emperor Maximilian II. This is the only complete horoscope that has survived, and from notes

historians can see that it took Nostradamus a full 14 months to make it. He mapped out the prince's future travels, how the family would branch out, what marriage would be like, what enemies would appear and what wars would be fought.

At 62, Nostradamus could sense his own death approaching, and he began to write his will. His fortune amounted to almost 3,500 écus, the equivalent of around £600,000. When he died on 2 July 1566, the manuscript of the almanac for 1567 was already ready for printing.

But even death was not enough to stop his popularity and ever-growing reputation as a prophet. On the contrary. *The Prophecies* was printed again and again. Given the cryptic nature of Nostradamus's predictions, successive generations have found it easy to fit them to events around them. In times of crisis and disaster, people continued to turn to *The Prophecies*. In England, the French seer was believed by some to have foretold the execution of Charles I in 1649 and the Great Fire of London in 1666.

#### USED AS NAZI PROPAGANDA

During the 20th century, Nostradamus's popularity grew further still. When Joseph Goebbels learned that the French soothsayer had supposedly predicted the rise of the Third Reich, he immediately had a propaganda booklet printed that claimed a Nazi victory was written in the stars. The booklet was distributed throughout Europe.

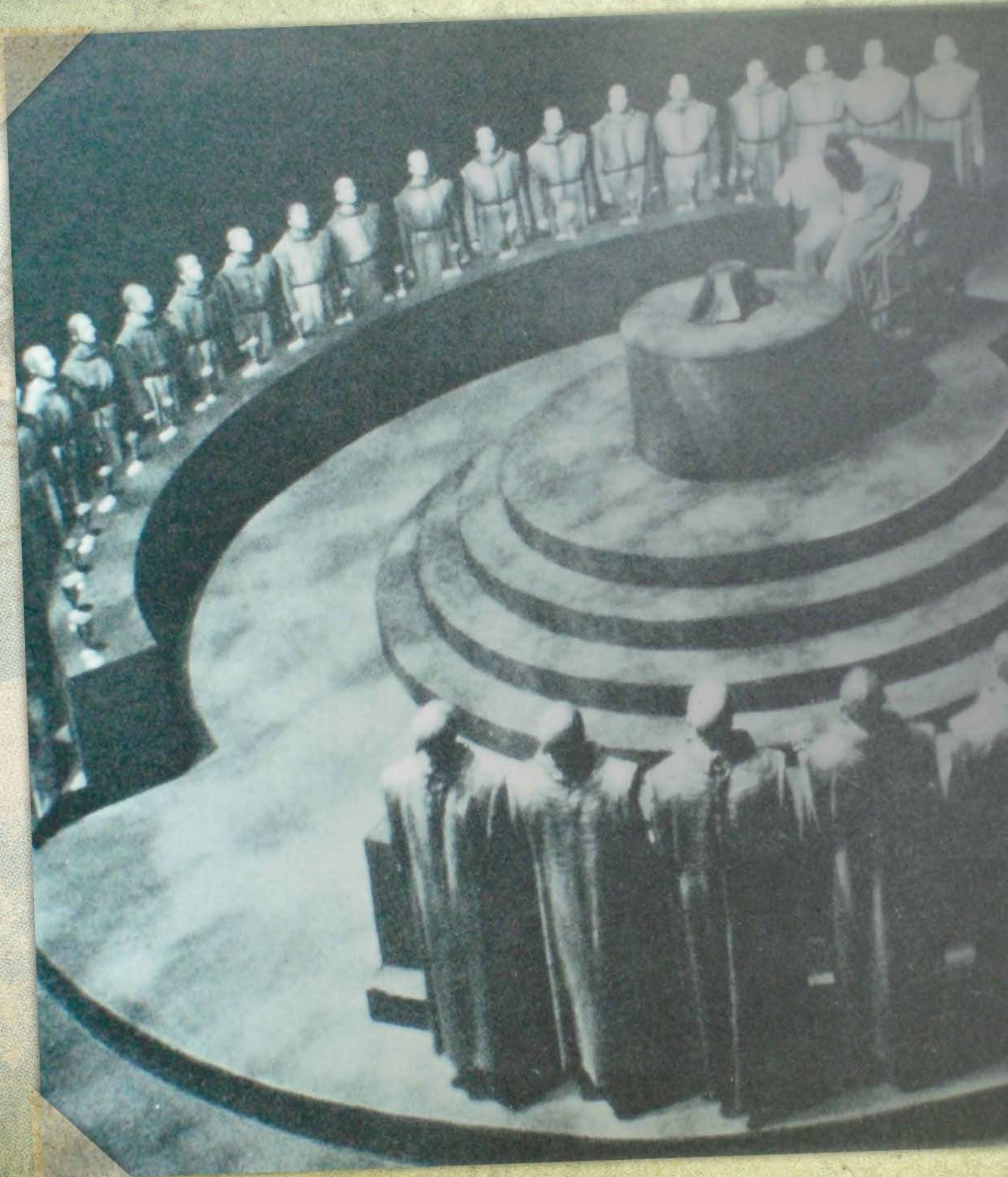
The British were quick to respond in kind and soon began to construct prophecies in the ancient seer's name, showing that he had not predicted the victory of the Third Reich – but rather the clear defeat of Germany.

More recently, interest in the astrologer's predictions exploded when the World Trade Center's Twin Towers collapsed on 11 September 2001. And as had happened so many times before, the French fortune teller's verses were twisted, falsified and finally reinterpreted to fit a new context. ■

Henry II's death following a knightly duel in 1559 established Nostradamus's name as a fortune teller.










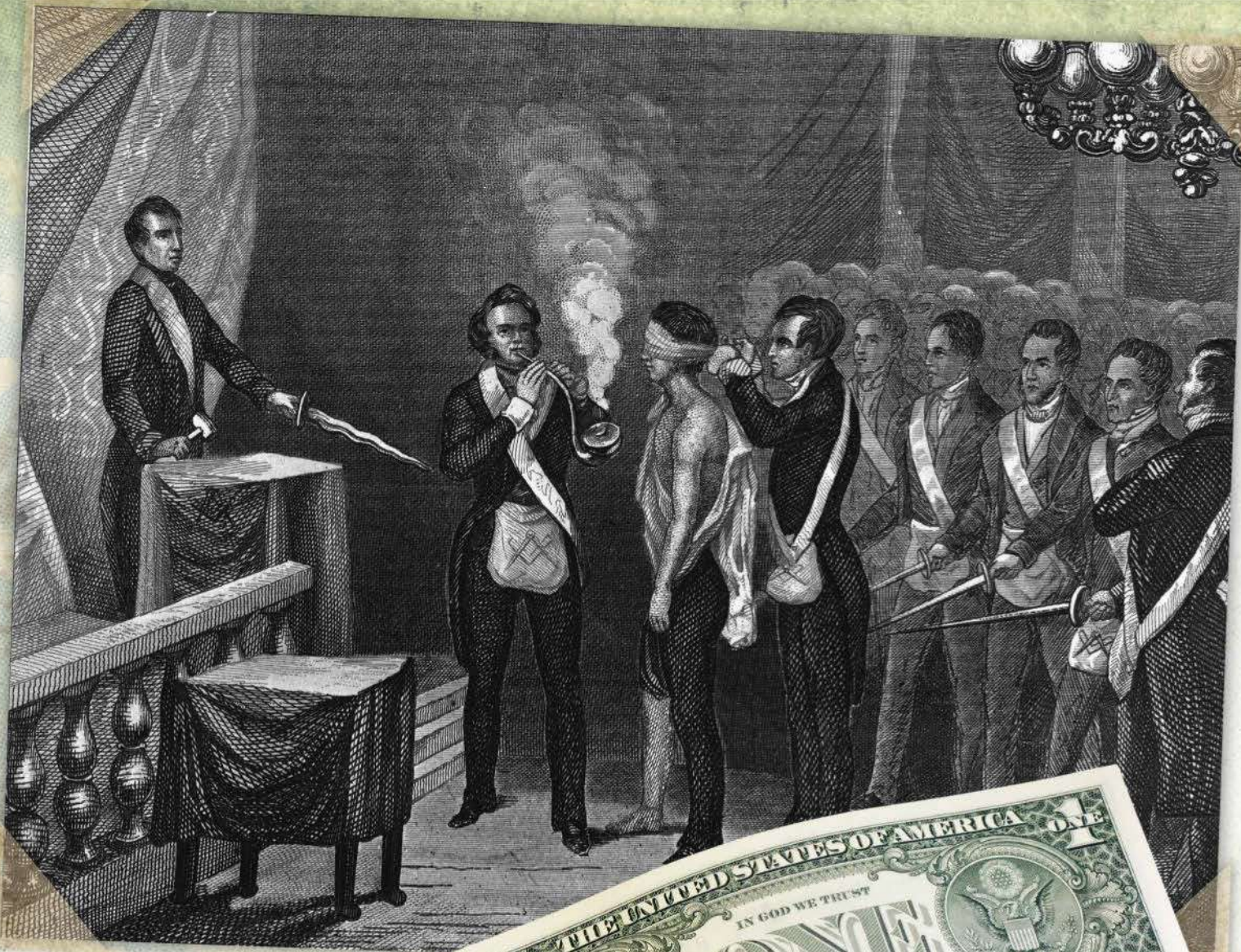


# SECRET SOCIETIES



Conspiracy theorists continue to wax lyrical about mysterious brotherhoods that covertly run the world. Everything from the German Illuminati to the medieval Knights Templar are said to control the world economy. The truth is that these secret orders have tended to be meeting places for insurgents, intellectuals or criminals. Today, only a few of the old societies still exist.



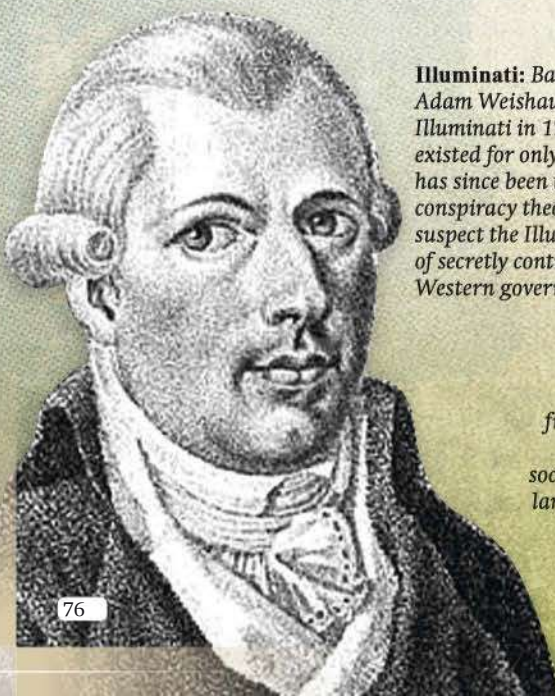


**Freemasons:** Documents confirm that the British order has existed for at least 600 years. It is reserved for men who believe in a supreme being – a term that is widely interpreted, and among the six million plus Freemasons, you'll find everyone from Christians and Muslims to Buddhists and Hindus. The order's meetings are held in secret but, in principle, membership is open to all.



**Dollar bills:** Conspiracy theorists believe the symbol on dollar bills – which Freemasons also use – is proof that the order secretly runs the United States.

**Illuminati:** Bavarian professor Adam Weishaupt founded the Illuminati in 1776. The order existed for only 11 years but has since been the focus of conspiracy theories that suspect the Illuminati of secretly controlling Western governments.



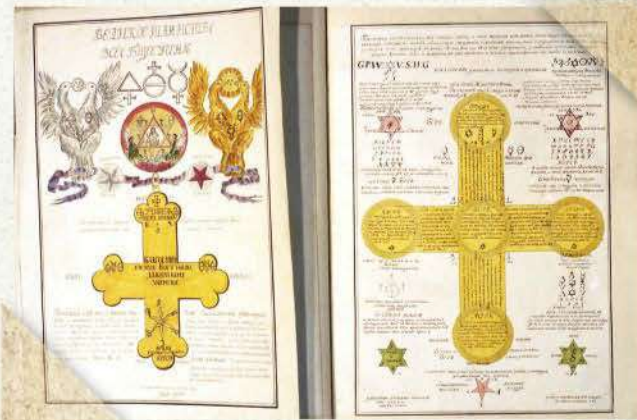
**Skull and Bones:** Yale University's secret fraternity admits 15 new brothers each year. The society is famous because a large number of Bonesmen hold top posts in US politics and business.







**Ku Klux Klan:** Shortly after the American Civil War, six men formed the KyKlos Klan, or Circle Clan. Since then, its hooded members have spread fear across the southern United States. In the 1920s, the Klan could muster four million men. Today, the number is around 6,000.



**Rosicrucians:** In 1607, a document appeared in Germany describing a sect of eight men. The Rosicrucians apparently worked to spread Eastern mysticism in Europe. The document was probably fake and the order never existed. Yet amateur historians are still hunting for the truth about the sect.

## THE WEST

■ Western orders have been at the centre of a number of conspiracy theories. The Freemasons and the 230-year-old Illuminati, in particular, have been suspected of secretly running Western governments and the world economy. The truth, however, is rarely as exciting as the myths. The vast majority of orders no longer exist, and Freemasonry is theoretically open to anyone – as long as you are male.



**The all-seeing eye:** The Freemasons have used the eye as their symbol since 1797. It was originally reserved for ancient Egyptian royalty and represents the god Wadjet.



**INITIATION** Freemasons admit two new brothers at a time. They are given the title Entered Apprentice, the order's lowest rank.

The order's initiation rituals are rarely as bizarre as the public thinks.

Ku Klux Klan members swear that they want white supremacy.





**Knights Templar:** The Order of Knights Templar was founded in Jerusalem in 1119 by two French veterans of the Crusades to protect pilgrims in the Holy Land. The new order was based at the Temple Mount in Jerusalem and was initially extremely poor – symbolised by their seal, which shows two knights sharing the same horse. But the knights pioneered an early form of banking and over the next 200 years grew to be an economic power house. The loan business proved fatal to the knights, however, when the French King Philip the Fair ended up in debt and arranged for the order to be accused of heresy.

**Weapons:** The leopard men wore claws on their hands. The sharp blades were used to tear the flesh off victims' bodies before it was devoured.



**Leopard Society:** In the 20th century, African nationalists formed one of the most feared societies in history. The leopard men donned leopard skins and metal claws and began a merciless hunt for Europeans, among others, near present-day Sierra Leone and Liberia. Using extortion, terror and the brutal mutilation of victims, the group sought to cleanse Africa of white people. Most of the sect's leaders were caught and hanged in the 1940s, and the cult disappeared.





**Alawi:** The Muslim sect, primarily found in areas of Syria, Turkey and Lebanon, kept its rituals and beliefs secret for centuries. In 1863, a former Alawi revealed that his fellow believers consider themselves Muslims, but also celebrate the birth of Christ, believe in the Holy Trinity and take Communion.



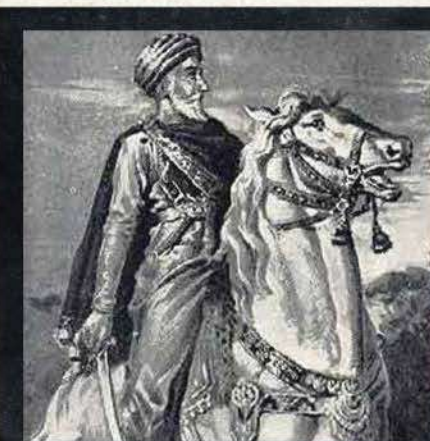
**Mevlevi:** The 700-year-old Muslim brotherhood is known for the ritual of Sema, in which believers spin around in a meditative dance to purify the mind and draw closer to Allah.

## MIDDLE EAST

■ Christian warriors, highly trained assassins and a brutal cult of man-eating African nationalists have all existed in the Middle East and Africa. But above all, the region is the epicentre of a long line of Muslim orders that have managed to guard their secret rituals for centuries.



**The Holy Grail:** For centuries, the cup said to have held the blood of Christ has been one of history's most mythical objects.



**ASSASSINS** In 1092, the Persian missionary Hassan-i Sabbah founded the Assassins – an order of trained killers...

...His assassins primarily hunted kings, nobles and wealthy men in the Middle East...

...The murders were often carried out before witnesses, so rumours of the assassins' skills spread.





**Thuggee:** From around the 1730s, this Indian killer cult murdered at least 50,000 people. The Thuggee sect was crushed by the British in the late 1800s.



**Strangulation:** Typically, Thuggees wiped out and looted entire caravans, erasing any trace of the crime. The victims were usually strangled.

**Ninja:** In the sixteenth century, Japanese princes began training spies and assassins for secret missions. One of the last detailed descriptions of ninjas dates from 1638, when a local shogun hired the dark-clothed assassins to murder a rebel leader.



**TRIADS** The Chinese movement considers itself the successor to General Guan Yu (in green), who fought to hold together the Chinese Han Empire in the early third century...

...The group emerged in the 1760s and wanted to restore Han rule in China...

...Today, the Triads control much of the Asian underworld.





**Tong:** The Chinese cult originated in the United States in the 19th century. Originally a secret society to protect Chinese immigrants from assault in the cities, the Tong organisation evolved over time into a mafia of sorts, heavily involved in criminal activity in US Chinatowns.

## ASIA

■ The toughest secret societies have undoubtedly existed in Asia. Here, black-clad ninjas and Indian mass murderers, among others, have spread fear among the innocent. As a defence against brutal gangs, monks and the weak developed a number of effective fighting techniques that could quickly disarm any opponent.



### Kusarigama:

By holding the heavy metal rod and swinging the kusarigama forward like a whip, a ninja could grasp an enemy's sword from a distance and disarm him. The opponent was then an easy victim.

### Martial arts:

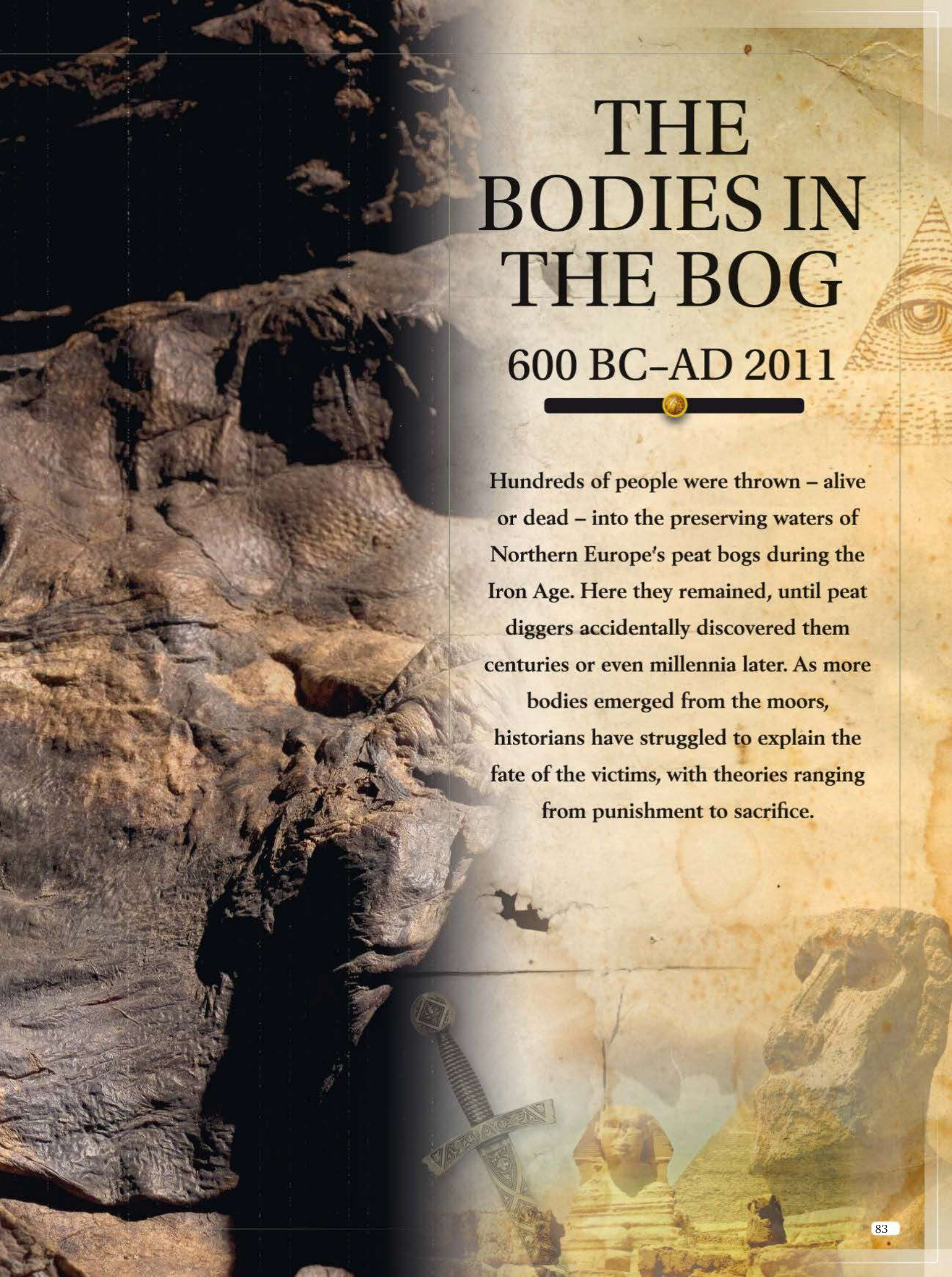
For centuries, Chinese, Japanese and Korean monastic orders have developed deadly fighting techniques. They are seen today in modern sports such as kung fu, taekwondo and karate.











# THE BODIES IN THE BOG

600 BC–AD 2011

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Hundreds of people were thrown – alive or dead – into the preserving waters of Northern Europe's peat bogs during the Iron Age. Here they remained, until peat diggers accidentally discovered them centuries or even millennia later. As more bodies emerged from the moors, historians have struggled to explain the fate of the victims, with theories ranging from punishment to sacrifice.



## 600 BC-AD 2011

c. 600 BC Iron Age Northern Europeans place the first bodies in the bogs.

1640 First report of a body in a bog near Holstein.



1965 PV Glob proposes a new theory: bog bodies were sacrifices.

1984 Lindow Man is found in a peat bog near Manchester.

2011 Advanced research continues to uncover new information.

1640

1965

1984

2011

On 1st August 1984, Andy Mould was extracting peat as usual from Lindow Moss, a 60-acre peat bog near Wilmslow, south of Manchester in Northern England. Suddenly, one of Mould's colleagues noticed a strange, elongated object on the conveyor belt in front of him. He picked it up and threw it to Mould.

Mould picked up the leathery object, brushing off the dirt and peat residue. A toenail appeared. The peat digger found himself holding human remains in his hands.

Workers immediately took their macabre find to the nearest police station, and soon Lindow Moss swarmed with officers meticulously investigating a possible murder scene.

Before long, the police had dug a whole human body from the peat, almost a metre below ground level. Investigators cut out a block of peat around the partly exposed body and shipped it to nearby Macclesfield District General Hospital for further examination.

#### LINDOW MAN DIED BRUTALLY

There, the coroner established that the body was not a recent murder victim, as the police had suspected. Instead, the peat diggers had found the remains of a 25-year-

old man who had been hidden in the dark bog for around 2,000 years.

It was obvious that the man had suffered a violent death. A long wound extended across the skull, and bone fragments were lodged far into the brain, indicating heavy blows to the head. The man's ribs had been broken while he was still alive, and his neck had been both cut and broken. Finally, evidence revealed that the perpetrators had strangled the unfortunate Iron Age man with a thin cord, which was still attached to the corpse's neck.

"A toenail appeared. The peat digger found himself holding human remains in his hands."

The bog body was initially dubbed "Pete Marsh" by journalists, but is now better known as Lindow Man, and, shortly after being forensically examined, was handed over to the British Museum in London, where over 50 specialists in fields as varied as archaeology and chemistry began to

investigate the man's fate.

The task of reconstructing Lindow Man's life and death quickly proved as difficult as the investigations into the hundreds of other bodies that have emerged from Northern European bogs over the centuries. The problem is that bog bodies are usually found in isolation, far from kitchen pits, settlements, graves or anything else that might provide archaeologists with vital contextual information. Lindow Man was no exception – no other artefacts from his life were found nearby.

#### PEAT BOGS COVER MUCH OF NORTHERN EUROPE

Common to both Lindow Man's resting place and the other peat bogs is that they're located in the moorlands that formed after the last Ice Age, when the climate became more humid. From around 5,000 BC, the bogs had spread over large areas in Denmark, Germany, the Netherlands and Britain. As much as 27 percent of Ireland was at one time covered by peat bogs.

Raised bogs are formed when layer upon layer of the peat plant sphagnum grows thickly over a period spanning hundreds of years. Slowly, the plants raise the bog above the surrounding landscape and cut off contact with groundwater, so the bog's sole source of water is from rainfall. Here, peat is created in the acidic waters of the raised bogs, which is what has helped to preserve the bog bodies for millennia.

The oldest bodies known to scholars are around 10,000 years old, while the youngest



Most of the bog bodies appeared while peat was being dug up for fuel, as shown here in Ireland in 1935.

have been in the bogs for only a few hundred years. However, most of the best finds date back to the Iron Age in Northern Europe, and it's usually these bodies that scholars refer to when they talk about bog bodies. Bog bodies have also been found in places like Florida in the US, where in 1982 168 bodies were excavated from a mass grave, believed to date from around 5,000 BC.

#### BOG WOMAN ASSUMED TO BE QUEEN

Ancient Northern European peat bodies first started to emerge from the marshy peat soil in the Middle Ages as peat began to be used for fuel. The first known report of a bog body being found comes from Holstein, Germany, where the farmer Hartich Sierk from Wrohm made a brief note in his journal to report the discovery of a bog body in Schalk Holzer Moor in 1640. Sierk thought the dead man was a murder victim. Body fragments may well have been discovered earlier, but not recorded or even identified as such.

Peat farmers worked in the bogs cutting peat for fuel, which they sold. Men did the hard physical work of digging up the peat, while it was often left to children and women to work as peat threshers, which involved laying the peat out to dry – a crucial step to prevent the peat decaying.

When peat farmers came across a body in the bog, they often thought it had been recently deposited, perhaps someone who had been murdered or had simply got lost in the treacherous bog – and they rarely wanted to be involved in a murder investigation.

Most of the earliest finds were therefore assumed to have been thrown directly on to the peat farmers' dung heaps. Often the discoveries were pulled from the bog without any care or attention, destroying important traces of the bog's past in the process to frustrate modern-day researchers.

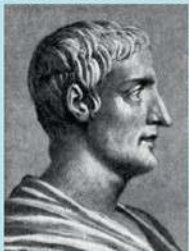
On the other hand, peat diggers often embellished the accounts of their finds when they finally spoke about them. In a

The Bjældskovdal peat bog, 10 kilometres west of Silkeborg, Denmark, where Tollund Man was found, one of the world's best-preserved bog bodies.

#### EYEWITNESS

PUBLIUS CORNELIUS TACITUS / *Germania*, AD 98

#### SACRIFICES BY THE ANCIENT GERMANIC TRIBES



"At a set time all the peoples who share that name and bloodline assemble through envoys in a wood hallowed by the auguries of their ancestors and the awe of ages. The public sacrifice of a human victim marks the grisly

opening of their savage ritual. In another way, too, reverence is paid to the grove. No one may enter unless bound with a cord, as an inferior who acknowledges the might of the deity. Should he chance to fall, he must not get up on his feet again, but roll out over the ground."



# VICTIMS SUFFERED A CRUEL DEATH



Diggers discovered bodies in the ancient Northern European peat bogs, from Ireland in the west to Germany in the east. Common to most of the victims is the violent way in which they apparently died. Many bear the mark of having been subjected to severe brutality and mutilation, before ending up in the dark swampy waters.

## LINDOW MAN

- **Discovered:** 1984
- **Cause of death:** Beaten to death in first century AD.
- **Colleagues:** Lindow Man is the best preserved of three bog bodies found in Lindow Moss.
- **On display at:** British Museum, London.



LINDOW

BRITAIN

## OSTERBY MAN

- **Discovered:** 1948
- **Cause of death:** Probably a severe blow to the head.
- **Hairstyle:** Tied in a Suebian knot characteristic of ancient North Germanic tribes.
- **On display at:** Gottorf Castle, Germany.



OSTERBY

NETHERLANDS

## WEERDINGE MEN

- **Discovered:** 1904
- **Cause of death:** One of the men has a large wound in his chest, and scholars have speculated that his intestines may have been used in a religious ritual.
- **Marital status:** They were long thought to be a man and a woman killed for adultery in the year AD 1. DNA analysis showed both to be men.
- **On display at:** Drents Museum, Assen, Netherlands.



WEERDINGE

## NEU VERSEN MAN

- **Discovered:** 1900
- **Cause of death:** Slit throat in first or second century AD.
- **Nickname:** 'Red Franz' because of his hair.
- **On display at:** Hanover, Germany.



NEU VERSEN  
GERMANY

## TOLLUND MAN

- **Discovered:** 1950
- **Cause of death:** Died around 350 BC, most likely by hanging; he was found with a noose around his neck.
- **Last meal:** Barley porridge containing flaxseed.
- **On display at:** Silkeborg, Denmark.



## HULDREMOSE WOMAN

- **Discovered:** 1879
- **Cause of death:** Bled to death or hanged in second century BC.
- **Clothing:** Sheep's wool plaid skirt and scarf, covered by a cape and overcoat, both made from several sheepskins sewn together.
- **On display at:** National Museum of Denmark.



TOLLUND HULDREMOSE  
DENMARK

OSTERBY



# “ It had to be the Norwegian queen Gunnhild, lured to Denmark ”

*This girl from the Netherlands suffered from a crooked back, and some researchers wonder if this is why she was stabbed and strangled to death at the age of 16.*

>>>> recent example from the middle of the twentieth century, a group of peat workers in Cambridgeshire in Eastern England claimed to have found a body standing upright in the bog in a canoe. Neither the body nor the canoe have ever materialised.

The Haraldskær Woman, found in 1835 at Haraldskær, near Jelling in Southern Denmark, also prompted locals to compose an imaginative story. The body had long, shiny hair, and before long the locals were convinced who she really was. It had to be the Norwegian queen Gunnhild, lured to Denmark by King Harald Bluetooth around 1,000 years before. It was assumed his men had drowned her in the bog.

The reigning King Frederik VI was so fascinated by the story that he donated an oak coffin for the body, which was subsequently placed in St Nicolai Church in the nearby town of Vejle. However, a carbon-14 study later showed that the body was much older than Queen Gunnhild. The Haraldskær Woman dates back to around 490 BC.

## GERMAN TAMPERED WITH FIND

The many finds made over the centuries in Northern Europe's bogs include clean skeletons, detached skulls with hair, and complete corpses with preserved soft tissue, skin and sinews. The circumstances of the finds are often unclear, and the closest archaeologists have come to a proper count is the record of

German cultural historian Alfred Dieck. A former member of the Nazi SA, Dieck was unable to find work in universities after World War II, so he often travelled alone around Europe to record any bog finds he could discover. From the 1950s to the 1980s, Dieck continued to publish new reports on bog bodies, and in 1986 he finally concluded that the total number of bodies exhumed from Europe's raised bogs was just over 1,850. Most of these, according to Dieck, had emerged from

**1,850**

bodies were claimed to be found by Alfred Dieck, but 10% of that number is more likely.

peat bogs in Germany and Denmark, where peat diggers had come across 940 and 441 bog bodies respectively.

Unfortunately, the German took the information he'd discovered from local archives and received from residents in the locations where bog bodies

had allegedly been found at face value. Recent reviews of Dieck's figures have shown that as few as 10 percent of his claims can be verified.

The unreliable source material makes it difficult to determine exactly how many bog bodies have been found. For now, archaeologists and historians are left to determine what happened to the ones they know actually exist.

## ROMANS DESCRIBED PUNISHMENTS

The real research into the secrets of the bog bodies began in the late nineteenth century. The Roman historian Tacitus became the

main source of knowledge about the bodies. Tacitus lived from AD 56 to about 117, and his *Germania* work provides a detailed description of the lives and customs of the ancient Germanic tribes to the north of the Empire. He portrayed them as a lowly and primitive people, and his descriptions included brutal punishments for crimes. "Traitors and deserters are hanged on trees; the cowardly, unwarlike and those who disgrace their bodies are drowned in miry swamps under a cover of wicker."

Tacitus also reported that among the Germanic tribes, "Adultery is rare in the extreme, and its punishment is summary and left to the husband. In the presence of kinsmen he shaves her hair and strips her, thrusts her from his house and flogs her throughout the village."

The body dubbed Windeby Girl from Northern Germany was assumed to have been subjected to such treatment. The

PETER VILHELM GLOB 1911-1985

## DENMARK'S CHIEF ARCHAEOLOGIST

■ Professor Peter Vilhelm Glob was at the scene whenever a body appeared in Denmark's peat bogs. The influential archaeologist and later senior director of Denmark's museums was the first to investigate both Grauballe Man and Tollund Man, and he knew how to make the bog bodies celebrities in his homeland. In

1952, immediately after Grauballe Man's discovery, Glob placed him in a display case at the Prehistoric Museum in Aarhus for ten days so that Danes could view their well-preserved ancestor. In his acclaimed books on Iron Age peoples, the professor argued that the bog bodies were sacrificed to an Iron Age deity that required human sacrifice. Until then, it was widely believed that bog bodies had been killed in punishment.

*Archaeologist – Professor – Director General of Museums and Antiquities in Denmark*





corpse was found by peat diggers in 1952, just three metres below the bog surface. The hair had been cut short on the right side of the head, while on the left it had been almost completely shaved off.

Although the body looked exactly like a woman punished by the methods described by Tacitus, DNA analysis later disproved the theory. Windeby Girl was in fact a teenage boy.

#### BOG BODIES WERE SACRIFICES TO THE GODS

Tacitus's accounts in *Germania* should generally be taken with a pinch of salt. The historian is known for celebrating Roman civilisation and portraying other peoples as barbarians by comparison. However, Tacitus is still important to historians because he is the only written source from the period.

The lack of reliable written sources means that researchers have to rely heavily on archaeological evidence when investigating the fate of the bog bodies. Although the death of Windeby Girl could

not be attributed to one of the severe punishments described by Tacitus, studies of many other victims suggest that he wasn't too far off the mark in relation to how the Germanic peoples meted out punishment. Many of the bog bodies, both adults and children, were killed in an extremely violent manner, just as Lindow Man had been.

One of the world's best-preserved finds, Tollund Man from the Silkeborg region in Denmark, is no exception. Evidence suggests that the middle-aged man was hanged – a twisted loop can be seen around his neck, which has made a furrow in the skin. Another Danish bog body, the Graubelle Man, was slit from ear to ear. X-rays have revealed that before his throat was slit, he was hit hard on the head, causing his skull to crack; his left shin was also broken.

Other bog remains reveal violent traces of decapitation, strangulation and stabbing. Several bodies, including Lindow Man, also bear the mark of having been mistreated, probably after death, where legs have been

## MOSS CHEMISTRY

### PEAT PRESERVES FOR MILLENNIA

**P**eat mosses have been preserved for thousands of years due to their unique chemical and biological properties. Windeby Girl from Northern Germany, shown in the pictures below, was in fact a boy of 14, whose hair band had slipped down over his face after death.

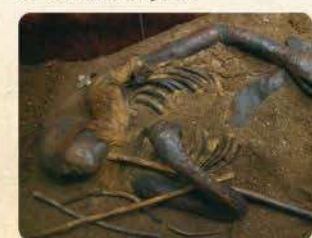
**1** Many of the ancient bodies were pinned underwater using a series of wooden stakes, either attached to the body or hammered into the bed of the bog. The stakes held the bodies underwater, so that they were beyond the reach of both aerobic microorganisms and carrion.



**2** A series of chemical processes begins in the acidic and oxygen-deprived bog, in which the sugar sphagnum found in peat moss plays a critical role. It traps nitrogen, so bacteria have nothing to feed on, preventing decay. The process also tans skin, cartilage and tendons, turning soft tissue into leather and dyeing hair and beards a fiery red.



**3** Guts and flesh dissolve in the bog, leaving only bones, skin and soft tissue – depending on the conditions. As soon as a bog body is dug out, it begins to decay – unless a skilled conservator steps in.







**Excavation:** On 26th April 1952, peat digger Tage Busk “stood on [his] shovel and it wobbled like a rubber ball” in the Nebelgaard Bog in central Denmark. As he removed a shovelful of peat, the head of Grauballe Man peeked out for the first time in millennia.



**Transport:** Grauballe Man was afforded ten days of fame in a display case at the Prehistoric Museum in Aarhus, before a team assisted by conservator Gunnar Lange-Kornbak and Professor PV Glob took him to Aarhus Municipal Hospital on 16th May, where he underwent a thorough medical examination.

broken and heads cut off. Academics describe the violent treatment of these ancient victims as “overkill” – literally excessive killing.

The number of broken bones accompanied by Tacitus’s tales of the brutal bog drownings of criminals has long led scholars to assume that the bodies in the bog were executed criminals or people punished for doing something morally objectionable.

In recent years, however, researchers have begun to discuss whether a large proportion of the broken bones and crushed bodies are in fact due to the weight of the bog bearing down on the bones of the Iron Age bodies over the centuries. The particular biological environment of the bog breaks down the calcium in the bones, which supports the theory that at least some of the broken bones occurred after the bodies were placed in the bog.

#### DANE PROPOSED NEW THEORY

Academics have long known that the vast swamps of Northern Europe were used as early as the Bronze Age to sacrifice valuable

objects to the gods, including weapons and amber. This knowledge became the basis for the groundbreaking bog body theory put forward by renowned Danish archaeologist Peter Glob in 1965. Glob hypothesised that Iron Age people had in fact placed people in the bog as offerings to the gods.

Tacitus refers to these kind of human sacrifices in *Germania*, and the Danish archaeologist pointed out that later Norse gods demanded human sacrifices, too. The Iron Age discoveries in the bogs could therefore be attributed to victims of the new Nordic religion – in which homage was paid to the gods through the sacrifice of a living human being.

Glob’s theory is still considered the most plausible by many scholars, and his book *The Bog People: Iron-Age Man Preserved* is still considered a major work of scholarship to this day.

This doesn’t mean that the former director of the National Museum of Denmark director has a watertight theory, however. For example, bog bodies are

almost never found in the same bogs as other offerings. Glob’s supporters argue that the other offerings may have dissolved in the bogs over time, along with the bodies’ own clothes. Alternatively, Iron Age people may have reserved the most sacred

bogs for human sacrifices, while lesser offerings were thrown into those considered less important.

A water sprayer was constantly used to prevent Grauballe Man from drying out before preservation.

#### WERE THE BODIES THOSE OF WITCHES?

Scholars regularly poke holes into the numerous theories about the fate of the bog

people, and just as often new explanations emerge as a result.

One of the most recent theories is that the bog bodies were simply victims of mercy killings. Several of the finds are clearly disfigured, leading some researchers to suggest that the victims may have been killed because they would have found it difficult to function in their own society of the time. A major weakness of the theory, however, is that far from all known bog bodies are deformed.

Other researchers interpret the many traces of lesions on the bodies as evidence that Iron Age people wanted to make sure the bodies could never return after being buried in the bog. They believe that the bog people may have been perceived as witches. The bog may have been chosen as the final resting place for the witches because it was seen as a mysterious intermediary, neither land nor water, and similarly situated between the worlds of the dead and the living. Here the witches could be hidden away for eternity.

This theory is supported by Tacitus, who mentions how the Germans tried to keep their human victims down in the bogs by restraining them. Many of the bodies,

#### TECHNOLOGY

#### CULTURE

#### ECONOMY

#### EVERYDAY



### Bodies were ground into medicine

In medieval Europe, bog bodies were coveted by pharmacists. The exhumed bodies were crushed and mixed up with similar powder from Egyptian mummies. Pharmacists – and the public – regarded the so-called mummy as a

life-extending elixir, and the value of the powder was so great that pharmacists began to ‘dilute’ the mummy with the crushed remains of dead criminals and paupers to increase profits and meet demand.





**Investigation:** The smelly body attracted a lot of attention at Aarhus Municipal Hospital's X-ray department. The grey-haired man was X-rayed, autopsied and closely examined for two months before work on preserving him began.



**Preservation:** Conservator Lange-Kornbak filled the corpse with fresh oak bark, which contains substances that aid in tanning the skin to leather.



**Finishing touches:** Lange-Kornbak spent more than two years on the process that gained him the honour of a Knight of the Order of the Dannebrog in 1971.

## “ Legs have been broken and heads cut off ”

consistent with Tacitus's claims, were found with branches or twigs laid over them. Some of the bodies even had stakes hammered through the body and into the soft bed of the bog – perhaps as an extra safeguard against unwanted resurrection.

### HOPE FOR NEW DISCOVERIES FADES

While there are several theories about the fate of the bog people, the truth may already be known, since the theories are not necessarily mutually exclusive. Many experts believe that the bodies in the bog may have been placed there for very different reasons.

Some may have been sacrificed to the gods, while others were buried after death. Still more may have been punished for crimes or morally objectionable behaviour. A few may simply have got lost in the mire and drowned by accident.

Unfortunately for historians, Northern Europe's bogs are shrinking, and with them the hopes of making new discoveries that might provide further answers to the riddles of the bog people. Peat harvesting has also ceased in many places, as bogs are now protected in order to preserve them as unique natural areas.

Perhaps the best hope for researchers is the increasingly advanced scientific studies they can carry out on the corpses already in museums across Europe. Perhaps future studies of Lindow Man will reveal that he was not murdered as brutally as academics currently believe. ■

*In 1859, the head of Stidsholt Woman was found separated from her body with the hair neatly plaited.*









# THE MAN BEHIND THE MASK

1669-1703

At a time when French criminals usually ended up on the gallows, King Louis XIV ordered a mysterious prisoner to spend the rest of his life behind bars. No one was allowed to know the identity of the man, who spent the next 34 years languishing in total isolation, his face hidden behind a mask. Soon the stories of the king's prisoner spread across France. In time, they became the myth of the man in the iron mask, whose true identity has never been discovered.



## 1669-1703

1669

The man in the iron mask is arrested.

1682

King Louis XIV moves his court to the luxury of Versailles.



1698

The man in the iron mask is moved to a tower room in the Bastille.



1703

The nameless, masked prisoner is declared dead.

1669 >>> 1682 >>> 1698 >>> 1703 >>>

*By the time the man in the iron mask arrived at the Bastille, the old fortress had long since changed from an impregnable military fortress to a well-guarded state prison.*

On 18th September 1698, an unusual prisoner arrived at the Bastille, France's most notorious prison, in the heart of Paris. The man's face was hidden under a mask of black velvet, and the prison staff had been forbidden to mention his name. As soon as he arrived, the inmate was taken to a temporary cell to wait for darkness. This was to ensure that no one could see the anonymous new prisoner. At 21.00, the prison's deputy governor, accompanied by a sergeant, took the inmate to the third room in the old fortress's Bertaudière tower.

The masked man had by this time already spent 29 years behind bars. Rumours were rife among the French, who had long ago transformed the mask on the inmate's head from soft velvet to the hardest iron. The myth of the man in the iron mask concerned a captive of such importance that even as an anonymous prisoner hidden behind a crude iron mask, he was revered and respected among the gaolers; a man of noble blood, perhaps even the true king of the realm.

34

years were spent by the man in the iron mask in prisons around France.

French King Louis XIV chose to spare the secret prisoner the treatment meted out to other criminals.

The fact that the king was personally involved in the case is known from the personal arrest warrant of 1669, which French historians discovered in the 1860s. The warrant bears the name Eustache Danger, which may be an alias – at that time, in France, it was normal practice to assign pseudonyms to prisoners held who were secretly being held.

Eustache Danger was arrested in the northern French port of Calais and transported to the prison at Pignerol in the south of France, where he was handed over to one of the king's musketeers, a gaoler and prison governor Bénigne d'Auvergne de Saint-Mars. For the next 34 years, Saint-Mars remained in sole charge of the top-secret prisoner.

The king's secretary of state for war carefully instructed Saint-Mars in a multitude of security measures: no one was allowed to speak to the prisoner at any time, and he was forbidden to approach his gaoler for anything other than absolute necessities. His cell was to have double doors so that no one could hear what was being said inside, and only Saint-Mars was allowed to take him food, once a day. Medical visits had to be attended by Saint-Mars, and the prisoner was only allowed to have contact with other people four times a year, when a priest could hear his confession.

## GAOLER CONTRIBUTED TO MYTH

For the next few decades, the secret prisoner languished in cells in prisons around France. In 1681, he was moved from Pignerol to the Exilles Fort in Piedmont (now in northern Italy), and later to the

island of Sainte-Marguerite off Provence. Always accompanied by Saint-Mars. Whether the prison governor ever learned his captive's real identity, historians still don't know. But there is nothing to suggest that he doubted the only two pieces of information he had received from the secretary of state, the Marquis de Louvois: that the man's name was Eustache Danger, and that he was "only a valet". In the following years of correspondence between the minister and the governor, the two made a point of never mentioning the prisoner's name. They merely referred to him as "the prisoner of the lower tower" or simply "the tower".

On the other hand, Saint-Mars may have deliberately contributed to speculation about the importance of his prisoner. The letters from Louvois do not mention any order to wear a mask – only that the prisoner should be isolated. Some historians therefore believe that Saint-Mars, who had previously been a gaoler of ministers and noblemen, felt degraded by having "only a valet" in his custody. With the mask, he created the illusion that his prisoner was a famous face.

"I can assure you, Monseigneur," Saint-Mars wrote to Louvois after transporting the prisoner, "that no single person has set eyes upon him, and that the care with which I watched over him on the road was such as to set everyone trying to discover who my prisoner could possibly be." The letter

## KING DEMANDED IMPRISONMENT

Although the stories were exaggerated, there is no doubt that the man in the iron mask suffered an unusual fate; the mere fact that he was imprisoned in various French gaols for more than 30 years was unheard of in France at that time. Prisons were mostly used for the short-term detention of petty criminals or nobles, while major crimes were punished by death

or life in naval galleys as slaves – a fate often worse than death. For reasons unknown, the



LOUIS XIV 1638-1715

## FRANCE'S RUIN

■ Louis XIV inherited the throne at the age of five and continued to rule until his death 72 years later. He built castles and academies, and cultural life flourished. At his enormous palace, Versailles, he gathered the nobility and held lavish parties. He loved to appear in theatrical performances,

frequently playing the role of the sun, earning him the nickname the Sun King. Louis also wasted a fortune on his aggressive foreign policy, waging several wars against Spain and other nations. The expenses drained the treasury, and the bill fell upon the French people in the form of crippling taxes.

Longest-serving head of state in European history – Built Versailles – Ruined France



“ No one was allowed to speak  
to the prisoner at any time ”





“The prisoner had to be the Sun King’s secret twin brother, who was being held to avoid a power struggle for the throne”

*In reality, the mask was made of velvet. The myth turned it into iron.*

>>>>> indicates, historians believe, that Saint-Mars was more than happy to turn his prisoner into a talking point.

#### VOLTAIRE GUESSED

None other than the French philosopher, writer and social commentator Voltaire further contributed to the myth of the famous face behind the mask, in various writings from 1751 onwards. The philosopher had spent 11 months in the Bastille himself for criticising the king, and had heard stories about the masked prisoner from both gaolers and fellow inmates. For Voltaire, it was clear: the only reason to put a mask on a prisoner was because people would recognise him otherwise. And since no one but the king, whose face was on French coins, was known to everyone in France, the mask had to be hiding royal features. Voltaire hinted that the

prisoner had to be the Sun King’s secret twin brother, who was being held to avoid a power struggle for the throne.

It is not known whether the philosopher himself was convinced of his theory, or whether he was merely trying to discredit the crown. But the story of the twin king quickly became popular among the people. The French suffered great injustice under the country’s monarchy and proved a willing audience for the myth of a good king left to rot in inhumane conditions while his evil twin feasted at the finest tables in Europe.

#### Napoleon

believed that King Louis’s brother was hiding behind the iron mask – and he himself was descended from him.

#### DOUBLE-AGENT THEORY

In 1770, before the ink had dried on Voltaire’s page, the French Baron de Heiss launched a new theory based on an account printed in a Dutch journal in 1687: the man in the

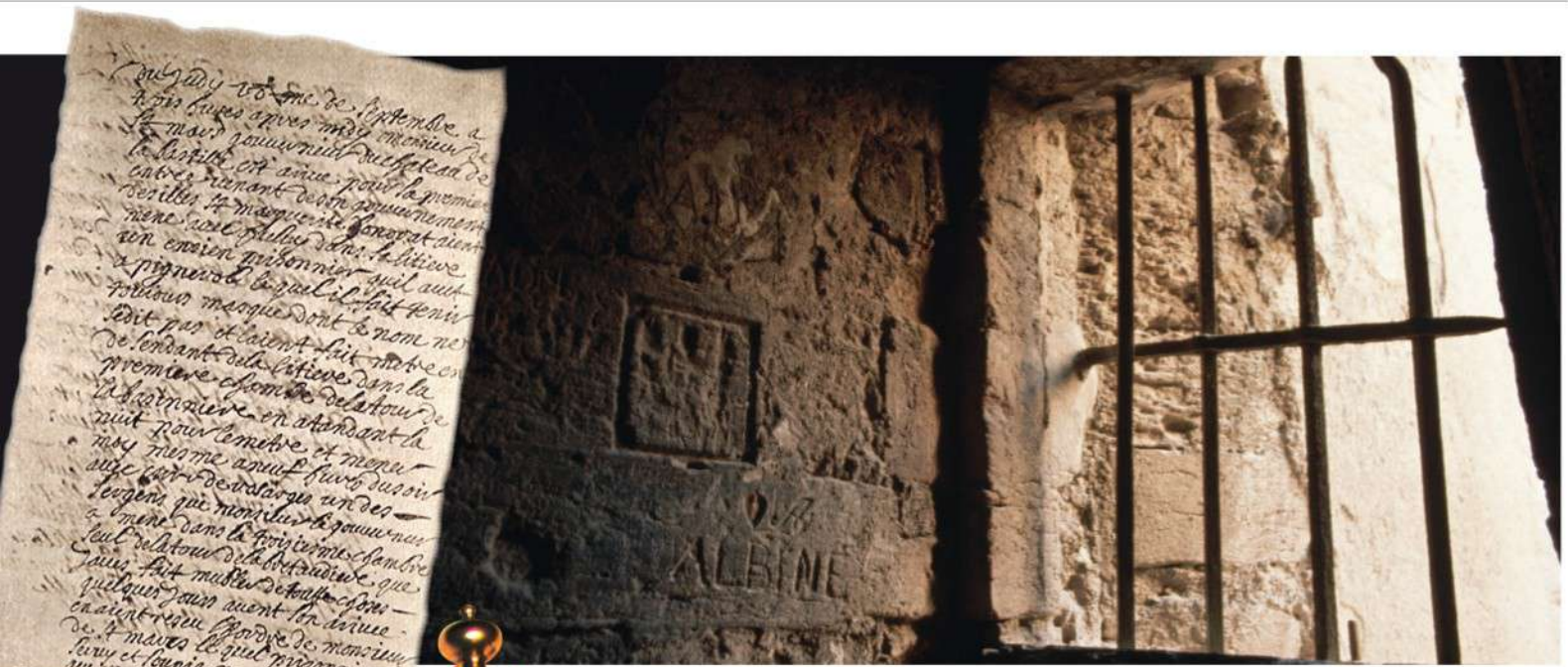
iron mask was the Italian diplomat Count Ercole Antonio Matthioli, who had double-crossed King Louis XIV when planning the French capture of the important Italian border town of Casale. When the French monarch discovered Matthioli’s duplicity, the Italian was immediately lured to France, arrested and thrown into prison at Pignerol – under the direction of Saint-Mars.

Historians long believed that the Matthioli theory made sense; in seventeenth-century Europe, the arrest of a foreign diplomat could have escalated political unrest, and Louis XIV would therefore have had good reason to keep

Matthioli’s identity secret.

But a letter from Saint-Mars to a friend, found by historians in 1869, has discredited the theory. In the correspondence, Saint-Mars mentions Matthioli’s name, which





In 1698, the Bastille's deputy governor recorded the masked prisoner's arrival in detail.

he was always careful to avoid when writing about the man in the iron mask.

#### THE KING'S PLOT

Today, according to several historians, documents and letters from the royal archives of the time rather suggest that minister Louvois's description of the prisoner as "only a valet" is close to the truth. Eustache Danger, they believe, may have been one of King Louis's personal servants who, under unknown circumstances, became aware of one or more explosive state secrets. King Louis could not have the man tried in a court of law, because a trial would expose the information. Instead, he sentenced the unfortunate servant to solitary confinement for the rest of his life.

Proponents of the theory of a simple servant who knew too much highlight Eustache Danger's primitive living conditions in prison, and how Saint-Mars repeatedly tried to get permission to use his secret inmate as a servant for other prisoners. One of those was the notorious bon vivant and former minister Nicolas Fouquet, who brought his servants with him into captivity. When one of them died, Saint-Mars repeatedly requested by letter that Fouquet be allowed to use Eustache Danger as a substitute. Permission was granted in 1675, and until Fouquet's death five years later, the man in the iron mask acted as the wealthy prisoner's personal servant.

Exactly what state secret the masked prisoner was in possession of has so far eluded academics. But French historian

The Man in the Iron Mask was doomed to a life of solitude. He was forbidden to speak at all unless it was absolutely necessary, and his personal gaoler of 34 years was instructed that no one should come into contact with the secret prisoner.

Jean-Christian Petitfils thinks he can make a good guess: Danger was the Sun King's envoy in a correspondence with the English King Charles II. According to Petitfils, the envoy could have learnt of the English king's secret agreement with the Sun King to convert to Catholicism in return for a strengthened alliance with the French. The alliance gave Charles II the power to root out his Protestant enemies in England, but his conversion to Catholicism remained a secret until his death in 1685.

According to Petitfils, the envoy theory is strengthened by the fact that Eustache Danger was arrested in Calais, less than 50 kilometres from the English coast on the opposite side of the Channel.

#### HISTORIANS ARE STILL GUESSING

After five years in the Bastille and a total of 34 years in prison, the man in the iron mask died at 22.00 on Monday 19th November 1703. The next day at 16.00, he was buried.

"In the register of deaths they also gave him a name of little account that Major Rosarges and M. Reil certified by signing

the register," the prison's deputy warden wrote in his log. Bénigne d'Auvergne de Saint-Mars died five years after his famous prisoner. If he knew who was hidden behind the mask, he took the coveted knowledge to his grave.

The identity of the man in the iron mask has therefore never been proven for sure, and new theories constantly emerge. One of the latest candidates believed to have been concealed behind the mask is Charles de Batz-Castelmore d'Artagnan – the true-life figure behind the musketeer d'Artagnan in Alexandre Dumas's tales of the three musketeers. Some historians believe that d'Artagnan did not die – as assumed – during an attack on Maastricht in 1673, but survived, badly wounded, only to be captured on the orders of Louvois. The minister allegedly wanted the musketeer to disappear to avoid him exposing Louvois's attempt to betray Louis XIV.

The theory is implausible, but proves that the identity of the Sun King's mysterious prisoner is unlikely ever to be revealed – and the myth will undoubtedly spawn new theories in the future. ■

#### TECHNOLOGY.....

#### CULTURE.....

#### ECONOMY.....

#### DAILY LIFE.....



#### Bestseller immortalised prisoner

French novelist Alexandre Dumas (1802-1870) took the story of the man in the iron mask far beyond the borders of France when he used the anonymous prisoner in his colourful tales of the three musketeers. Dumas built upon the popular myth

that the man in the iron mask was the king's secret twin brother. In the final instalment of the series of swashbuckling stories, the heroes throw themselves into the struggle to free the good twin and install him on the throne rather than the unjust Louis.







# THE HUNT FOR EL DORADO

1492-today

For more than 100 years, Spanish explorers toiled through South America's inaccessible wilderness in search of the lost city of gold: El Dorado. They subdued the Inca Empire, scoured the Amazon Basin and drained a lake in Colombia with wooden buckets, all to no avail. The legendary gold was never found. Since then, English adventurers and American anthropologists have followed in the conquistadors' footsteps – convinced that the mythical El Dorado lies hidden somewhere in the Amazon rainforest.



1492-



**1492** Columbus reaches America after two months at sea.

**1532** The Inca Empire is subdued by Spanish conquistadors.

**1537** Spanish expedition finds the Muisca people.

**1588** Treasure hunters try to drain Lake Guatavita to find gold.

**1909** A British company manages to empty Guatavita.

**1925** Percy Fawcett disappears searching for El Dorado.



1492 >>> 1532 >>> 1537 >>> 1588 >>> 1909 >>> 1925 >>>

**W**hen Spanish explorers made contact with South America's Indians, they were told an incredible story. The local inhabitants told them that deep in the wilderness of the vast continent lay a city so rich that its roads were paved with gold and its houses were adorned with precious stones. The tale was the start of a centuries-long quest for treasure. Conquistadors, adventurers and, more recently, archaeologists have all searched for El Dorado, the golden city spoken of in the early tale.

Today, we know that El Dorado was not actually the name of a city, but rather the name the Muisca people of central Colombia bestowed upon their king.

#### THE MAN AND THE MYTH

According to myth, the wealthy Muisca held magnificent ceremonies where they took their king to the shores of a lake and covered him in gold dust until he shone like a god. Then, the gold-clad king boarded a primitive raft and sailed out to the middle of the lake with four companions. Together, the five men began pushing huge quantities of gold, silver and precious stones overboard as an offering to the goddess that the Muisca believed lived in the lake.

The legend claimed that over the years the sacrifices had filled the lake with gold, and the ruler of the Muisca people soon became known as *El Hombre Dorado* – the Golden Man.

By the time Columbus reached America in 1492, the Muisca people's stories of

*El Hombre Dorado* were ancient – and over time they had changed in character. Now the Muisca spoke instead of the mysterious city of El Dorado, which was supposedly home to a hoard of gold of unimaginable proportions. The story quickly fed the dreams of thousands of conquistadors.

Most Spaniards in the New World were poor noblemen with no hope of inheriting their fathers' lands or making a decent life for themselves back home in Europe. But in South America, they saw an opportunity to get their hands on vast wealth.

In the early sixteenth century, Spanish fortune hunters arrived in numbers and

"In the early sixteenth century, Spanish fortune hunters arrived in numbers and set out in search of El Dorado"

set out in search of El Dorado, exploring Central and South America in the process. The Spanish expeditions pushed further and further into the wilderness and quickly mapped large parts of the new continent.

In 1521, they conquered the Aztec Empire, taking its vast riches as spoils of war.

The vast cache of gold hidden away in the Aztec capital of Tenochtitlan only fed the Spaniards' greed, however. Seven years later, the conquistadors stood on the borders of the vast Inca Empire, which ran down the Pacific coast from Ecuador to Chile and stretched inland across the Andes and into the Amazon rainforest.

#### AN EMPEROR'S RANSOM

After a series of failed attempts to penetrate the Inca Empire, in 1532, the Spanish conquistador Francisco Pizarro entered what is now Peru with 169 men, 27 horses and a single cannon. The modest army soon proved invincible, however. The steel-clad warriors from Europe were invulnerable to

the Incas' slingshots, arrows and spears, which couldn't penetrate the conquistadors' armour. At the same time, Pizarro allied himself with local tribes along the way and his army grew.

After a fierce battle in northern Peru, Pizarro took the Inca emperor Atahualpa hostage and demanded that a room seven metres long by five metres wide be filled to the ceiling with gold by way of ransom. He also demanded double that volume in silver. The Incas paid up, stripping the gold panelling from their temple in the capital city of Cusco to pay the ransom. But the duplicitous Spaniards reneged on the deal. Once the treasure was delivered, Pizarro ordered Atahualpa's execution and then captured Cusco.

Pizarro's cousin, Pedro Cieza de León, marvelled at the capital's wealth. His writings describe a single dwelling that included "twenty llamas of gold with their lambs, and shepherds with their stone slings and staffs, all of the same metal". Outside, he saw "a garden, the earth and grass of which was of fine gold and where artificial maize grew, also of gold".

Although the immense wealth of the Incas must have been hard for the Spanish fortune hunters to comprehend, the hunt for El Dorado did not end there. The Incas told of even greater riches to be found in the great rainforest to the east.

#### HELLISH TERRAIN

Between 1536 and 1541, the Spanish sent five new

#### TECHNOLOGY

#### CULTURE

#### ECONOMY

#### DAILY LIFE



### King demanded a fifth

In 1504, the Spanish King Ferdinand V signed a law that gave the crown 20 percent of all gold and silver found in the new colonies. The famous *Quinto Real* (Royal Fifth), which all conquistadors had to pay on their return

to Europe, brought the crown enormous wealth. Gold flowed into the royal treasury for more than two centuries before the king halved the tax due in 1723. By then, the mines of Central America were almost empty.

**SEBASTIÁN DE BELCÁZAR**  
1479-1551

■ Belcázar was a typical conquistador: a poor Spanish nobleman with no hope of inheriting, who went to South America and made his fortune by looting Indian villages of their gold.



One of the earliest maps showing the coastline of northern Brazil.

**WALTER RALEIGH**  
1552-1618

■ The founder of the first English colony in America, Raleigh tried to find El Dorado twice. Both times, he searched near Guyana on the north coast of South America.



**HERNÁN CORTÉS**  
1485-1547

■ Cortés conquered and plundered the Aztec Empire in 1521. The vast wealth he sent back to Spain sparked a veritable gold rush to Central and South America.



**FRANCISCO PIZARRO**  
1471-1541

■ The Spanish Pizarro subdued the mighty Inca Empire in just five years. He sacked the capital Cusco and then sent his brother to find the city of El Dorado.





expeditions to search for the city of gold. Pizarro's half brother, Gonzalo, commanded an expedition of 220 Spanish soldiers, 2,000 dogs and 4,000 natives. From the mountain town of Quito in present-day Ecuador, the expedition fought its way over the Andes and deep into the rainforest. As the months passed, supplies ran out and the native helpers fled, and when the expedition's progress was halted by a large river, the group was forced to send a party downriver to find provisions.

Although it wasn't their intention, Gonzalo's party became the first Western expedition to explore the Amazon, which winds its way from the Andes in the east to South America's Atlantic shore.

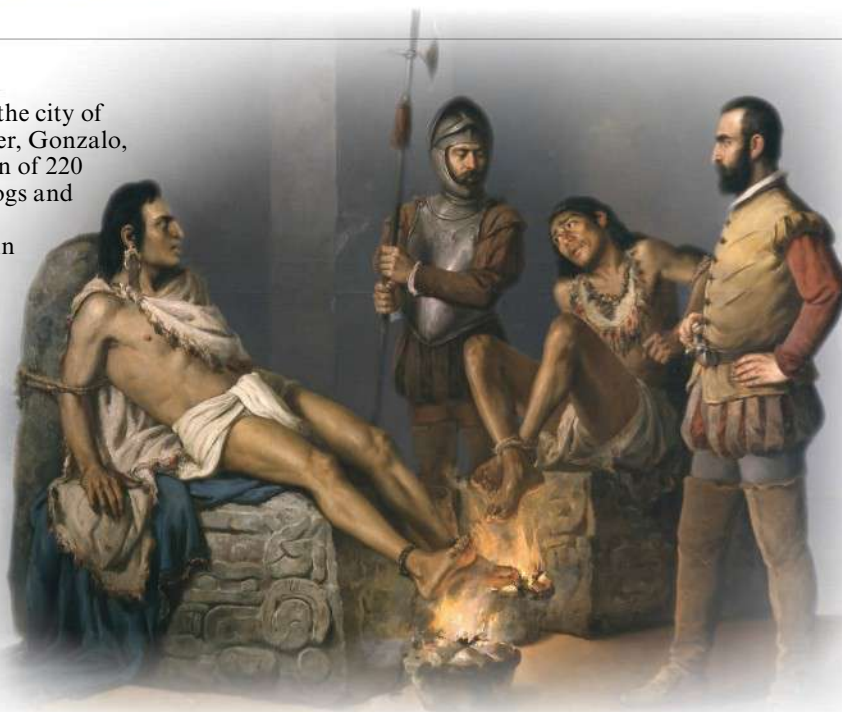
**LAWYER FINDS THE LAKE OF GOLD**  
While Gonzalo Pizarro fought his way east through the rainforest, the young Spanish

lawyer Gonzalo Jiménez de Quesada set out to find the lake where the Muisca had sacrificed their treasures. Quesada didn't believe in a city of gold. He had heard the tale of El Hombre Dorado and was convinced that any riches had to be hidden

*The Indians were subjected to brutal torture by the conquistadors. The aim was to get information about golden treasure hidden in the villages.*

in the lake where the Muisca had made their sacrifices. Despite being a descendant of Portugal's successful Prince Henry the Navigator, Quesada soon ran into trouble in the unknown land. The locals refused to help the expedition, which soon struggled against hunger and disease. Journal entries tell how Quesada's men were forced to eat snakes, reptiles and even the leather from the scabbards of their swords. By the time the expedition reached the site of modern-day Bogotá in Colombia, only 179 of the original 800 men were left alive.

Here, Quesada found the Muisca, who, to the Spaniard's great disappointment, proved immensely poor. They had no gold – the only natural resources available were salt and potatoes. Quesada did not leave the meeting with the natives empty-handed. The locals



## SOLDIERS CARRIED WEAPONS AND TOBACCO

Exploring the South American rainforests soon proved a misery for the conquistadors. They carried kilos of gear with them through the tropical, humid jungle. This included a mix of military equipment from the Old World and daily necessities from the New. The conquistadors' heavy Toledo armour was replaced during the sixteenth century by a lighter version, in which the arm and leg protection had been removed.

*Conquistadors typically wore winged morion helmets.*



*This bag is engraved with the initials WR – Walter Raleigh – and the year 1617.*



*Pipe mounted with silver and a matching tobacco stopper in bone.*



*This red leather tobacco pouch probably belonged to the English explorer Sir Walter Raleigh, who tried to find El Dorado twice.*



explained that in its heyday, the Muisca civilisation had traded for large quantities of gold – much of which now lay at the bottom of Lake Guatavita.

### EMPTYING THE LAKE WITH BUCKETS

Quesada had found the lake at last and he knew it must be full of gold. The Muisca had been making sacrifices to their goddess for at least 200 years. So, in 1545, Quesada's brother Hernán Pérez de Quesada organised a giant project to drain the lake. Spanish soldiers and thousands of natives were given wooden buckets and ordered to empty the water and expose the lake bed.

For three months, natives and Spaniards worked side by side, draining hundreds of thousands of gallons of water from the lake. The huge human chain sent bucket after bucket of water away from the lake and, impressively, managed to lower the water level by three metres.

The project bore some fruit. The drained area yielded around 3–4,000 pesos in gold – the price of a horse. But having pocketed the meagre return, Quesada abandoned the job – the rewards just weren't worth the effort. Some 40 years later, businessman

Antonio de Sepúlveda took a more radical approach. He hired 8,000 natives to carve a channel through one of the rock inclines surrounding the lake. Water slowly began to flow out of Lake Guatavita.

This time, the water level dropped by 20 metres but then the channel's sides collapsed. Hundreds of natives who had been working inside the channel died, and Sepúlveda suspended his drainage project.

One of Sepúlveda's friends, Rodríguez Fresle, claimed that the Spaniard had recovered more than 12,000 pesos from the exposed sections of the lake, and said: "A long time later [Sepúlveda] continued to want to make another drainage [attempt], but could not. In the end he died poor and exhausted."

### NO ONE COULD GET THE GOLD

Around the same time as Sepúlveda died, the Spanish stopped hunting for El Dorado. Most people now agreed that the city of gold did not exist and that Lake Guatavita was the closest thing to a real El Dorado. But the job of draining Guatavita

### 30 kilos

– that was the weight of armour that the conquistadors wore in the humid rainforests of the New World.

The vulnerable neck area was protected by a steel collar.



The Spaniards quickly adopted the Aztecs' milky white cactus brandy, pulque. In 1672, the colonial government was forced to ban public consumption of the drink.

Typical navigation equipment from the sixteenth century.

Leg protection was removed to improve mobility.

The gold was distributed according to a careful formula among the king, expedition leaders and soldiers.

The Toledo steel swords were about a metre long and were considered the best blades of the age. They gave their owners such an advantage in battle that natives were not permitted to own a sword for centuries after the invasion.

Nutritious yams proved indispensable. They were ground into bread and used in soups.

During the sixteenth century, the heavy steel boots were replaced by light leather shoes.

The armour was effective protection against the Indians' arrows, spears and slingshots.



>>> was too challenging, and the yield too small.

The dream of capturing the rest of the vast quantities of gold believed to be on the lake bed blossomed again in the nineteenth century, when quantum leaps in technology brought renewed hope.

In 1898, a local businessman established the Company for the Exploitation of the Lagoon of Guatavita and two years later sold the rights to excavate the lake to the British company Contractors Ltd.

The plan was simple: the company would dig a tunnel to the bottom of the lake and drain Guatavita through grates that would collect any gold and precious stones.

After 11 years of toil, the tunnel was completed and water began to flow out of Guatavita to nearby areas through an ingenious sluice system.

## PROTECTED LAKE

When the lake bed was finally exposed, more than a metre of mud remained. The Britons waited for the water to evaporate, but in vain. The sun soon baked the mud as hard as concrete, making it almost impossible to penetrate.

Determined to get their hands on Guatavita's treasures, the British tried to hack through the stiffened mud. Contractors Ltd found both gold and precious stones in the hardened lake bed, but only in small quantities, and eventually the lake refilled to its former level.

When the London auction house Sotheby's was asked to sell the treasures, Contractors Ltd was disappointed to find that, despite 11 years of work, they had only uncovered £500 worth of gold. The company attempted to dig out the drains again after World War I, but the attempt failed and in 1929 Contractors Ltd went bankrupt. It



*For centuries, treasure hunters tried to drain Lake Guatavita in Colombia to find El Dorado and its hidden gold.*

wasn't long, however, before fresh attempts with more modern technology were made. The pull of gold was as strong as ever.

In 1965, the Colombian state decided that enough was enough and banned all treasure hunting in the area. Lake

Guatavita was given protected status as part of the South American country's historical and cultural heritage.

## The Muisca

were almost wiped out in the sixteenth century. Today, c. 9,000 of their descendants live in Colombia.

## EXPEDITION VANISHED

Lake Guatavita was of no concern to British Colonel Percy Harrison Fawcett when he set out in the 1920s to hunt El Dorado.

Fawcett was instead focussing on information he had gleaned from local Brazilian tribes and a Portuguese manuscript from 1754.

The document described another failed hunt for El Dorado, but said the expedition had come across a mighty city in the Mato Grosso region of western Brazil, far from the homeland of the Muisca people. According to the text, the city contained stone arches, grand avenues and a temple structure with hieroglyphics.

Fawcett became convinced that the Amazon jungle hid the remains of a highly developed civilisation, one that was older even than the previously discovered South American cultures. The civilisation must have been immensely rich and, the British

explorer believed, the source of all the myths about El Dorado.

In 1925, Fawcett set off into the Brazilian rainforest, but despite an iron helmet, a unique linguistic talent and a flair for bonding with Indian tribes, he vanished without a trace. Two rescue expeditions returned empty-handed with no explanation for what had become of the adventurer.

Before the fatal expedition, Fawcett claimed to have found pottery and advanced waterways that supported his theory, but unfortunately he disappeared before his finds were confirmed.

## THE HUNT CONTINUES

Today, academics and treasure hunters think Fawcett may

have been on the right track. It's not inconceivable that the Amazon wilderness hides undiscovered remnants of great civilisations, and the theories are supported by accounts from the conquistadors. The Spaniards spoke of vast agricultural areas and fortified cities that no one has since been able to identify.

Using satellite photos and flyovers, US anthropologists have found ancient road networks in Colombia and identified ancient land-use in an area twice the size of Britain. At the same time, satellite photos show traces of at least 20 towns that could have housed thousands of inhabitants. Both suggest that a highly developed culture existed in the area where the poor Muisca were discovered in the sixteenth century.

Research teams are now working on projects in the Amazon jungle to try to trace the conquistadors' lost cities. Archaeologists are looking for huge geometric patterns on the Earth's surface – a sign of irrigation channels and roads. Whether they come across streets paved with gold, only time will tell, but after 500 years of searching, El Dorado may finally be within reach. ■

*At the Museum of Gold in Bogotá, visitors can see a number of Muisca treasures, including a gold raft carrying a king.*

**PERCY FAWCETT 1867-1925**

## GREATEST ADVENTURER OF THE TWENTIETH CENTURY

■ British artillery officer Percival Harrison Fawcett launched an expedition to search for a lost city he called Z in the early twentieth century. He was drawn by legends that spoke of a mythical city buried deep in the Brazilian rainforest. The stories of Z's riches led many European treasure hunters to believe it was the source of the El Dorado stories. In 1925, after seven unsuccessful attempts to locate Z, Fawcett set off on

another expedition down the Amazon. After spending the night with local tribesmen, Fawcett and his companions disappeared into the rainforest and never returned. Rumour has it that the explorers were murdered by hostile Indians just five days after leaving the camp. Since then, more than 13 expeditions have searched for Fawcett and the lost city without success. At least a hundred people have died in the search.

*Colonel in the British Army – Map maker for the Royal Geographic Society – Explorer*



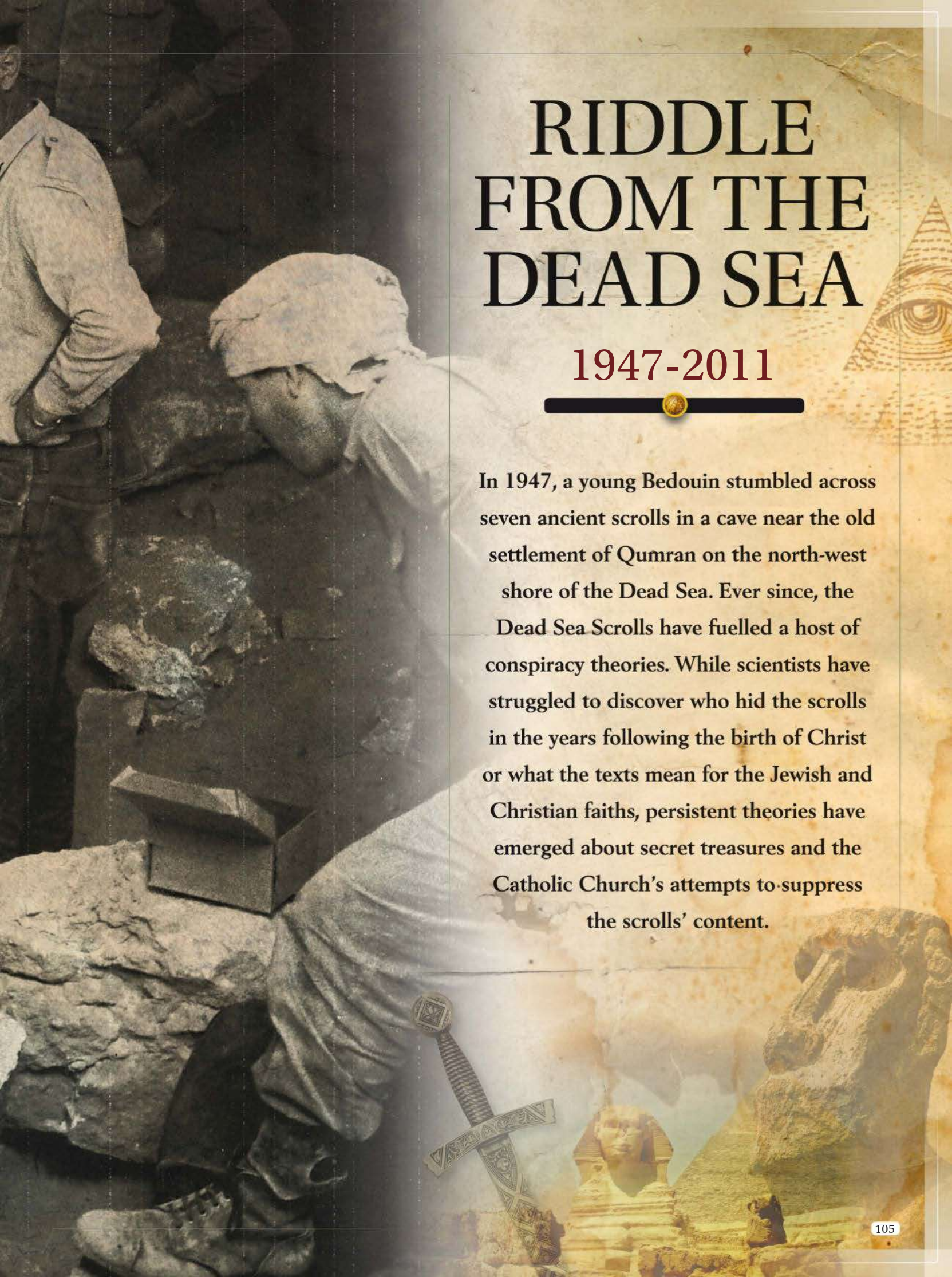
“At the same time, satellite photos show traces of at least 20 towns”











# RIDDLE FROM THE DEAD SEA

1947-2011

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In 1947, a young Bedouin stumbled across seven ancient scrolls in a cave near the old settlement of Qumran on the north-west shore of the Dead Sea. Ever since, the Dead Sea Scrolls have fuelled a host of conspiracy theories. While scientists have struggled to discover who hid the scrolls in the years following the birth of Christ or what the texts mean for the Jewish and Christian faiths, persistent theories have emerged about secret treasures and the Catholic Church's attempts to suppress the scrolls' content.



## 1947-2011

**1947** A Bedouin finds the first Dead Sea Scrolls in a cave near Qumran.

**1948** John C Trever identifies the first of the scrolls.



**1954** Israel buys four of the most important Dead Sea Scrolls via an intermediary.



**2010** Israeli authorities promise to put the scrolls online for free.

1947 >>> 1948 >>> 1954 >>> 2010 >>>

The 1948 Jerusalem conflict was as harsh as an Old Testament plague. The old buildings on Salah al-Din Road that housed the American Schools of Oriental Research in Jerusalem had a damp coldness that penetrated the bone marrow of the academics inside. The young US archaeologist and biblical scholar John C Trever was shivering next to a small electric hotplate as he studied a set of manuscripts, about the Bible's flora and fauna when a gentle knock sounded on his office door. It was the institute's cook, Omar.

"Someone wants to know about some ancient Hebrew manuscripts," said the cook, indicating the telephone.

At the other end of the line was Father Butrus Sowmy, the librarian at the Syrian Orthodox Monastery of St Mark. He

explained that he had come across a number of old

manuscripts that he wanted Trever to look at. The academic hid a sigh and graciously agreed.

The following day, Sowmy arrived with four scrolls of different sizes in a brown leather bag, wrapped in an Arab newspaper. Trever unrolled the largest of the scrolls and was delighted to see that it was extremely well preserved. Then, sensing the importance of the find, Trever's heart began to pound. A quick look in a reference work on ancient biblical texts

confirmed his thinking: the scrolls before him could be a unique find. The resemblance to the oldest known fragment of biblical texts to date – the Nash Papyrus from the first century BC – was striking. Trever copied a few lines of the Hebrew text from the largest scroll, being careful to match the lettering exactly.

In the evening, the young researcher studied the transcript and quickly discovered that the words were identical to a passage in the Book of Isaiah from the Old Testament.

**Jerusalem** was plagued by violent clashes when the scrolls were first brought to academic attention.

Trever had identified the first of the rich collection of writings we know today as the Dead Sea Scrolls. The archaeologist decided to photograph the documents, which proved quite a challenge; the situation in Jerusalem was tense and no usable film could be found.

Britain was about to hand over its Palestinian mandate to the UN, which had passed a resolution to divide the region into an Arab and a Jewish state, with an international zone in Jerusalem. The mountain capital echoed with the sound of warning sirens, bomb blasts and clashes between Arabs and Jews. Amid all this, Trever embarked on a week-long search for film, visiting all the camera shops in the old quarter of the battered city. Eventually, he secured enough to produce a large collection of valuable photographs of the ancient texts.

#### THE TREASURE HUNT WENT ON

The unique scrolls had been found about a year earlier by a Bedouin youth named Muhammid edh-Dhib – known as Muhammid the Wolf – and his two older cousins in a rock cave in an area near the Dead Sea's north-western shore, 20 kilometres from Jerusalem. How the four



The scrolls were found on the north-western shore of the Dead Sea, now part of the Palestinian Authority's West Bank in Israel.

scrolls found their way from the young Bedouins to St Mark's is not entirely clear, but it is likely that a dealer in antiquities in Bethlehem brokered a deal with the abbot of St Mark's. The Bedouins reportedly received only a few dollars for their efforts.

In the 1950s, the area where the scrolls had been found witnessed a scramble as Bedouins, archaeologists and treasure hunters competed to unearth new finds. These rather dubious expeditions uncovered a total of 11 caves containing thousands of manuscripts and fragments, but the chaos surrounding their discovery made proper documentation and overall mapping of the finds impossible. As a result, it's highly likely that some material never reached the hands of the official team handling the discoveries.

#### FROM THE TIME OF CHRIST

In the early 1950s, archaeologist and priest Roland de Vaux of the Ecole Biblique, a French Catholic school of theology and archaeology in Jerusalem, was entrusted with the task of sorting through the wealth of material that had been handed over. The Jordanian authorities in charge of the site



Bedouin shepherds searched for ancient relics in the desert.

MUHAMMID AHMED EL-HAMED 1931-?

### MUHAMMID THE WOLF

■ Muhammid Ahmed el-Hamed, better known as edh-Dhib (the Wolf), grew up as a nomad in the desert near the Dead Sea. In the winter of 1947, at the age of 16, he and his two older cousins were tending their sheep and goats near the ancient ruins of Qumran when they spotted a cave high above. Muhammid went inside and

discovered ten old jars, one of which contained three manuscripts. In all, the cousins found seven scrolls in the cave. The Bedouin youths were the first to see the Dead Sea Scrolls in almost 2,000 years. They sold them shortly afterwards at the market in Bethlehem.



Found the first seven Dead Sea Scrolls – Lived as a nomad with the Ta'amireh tribe

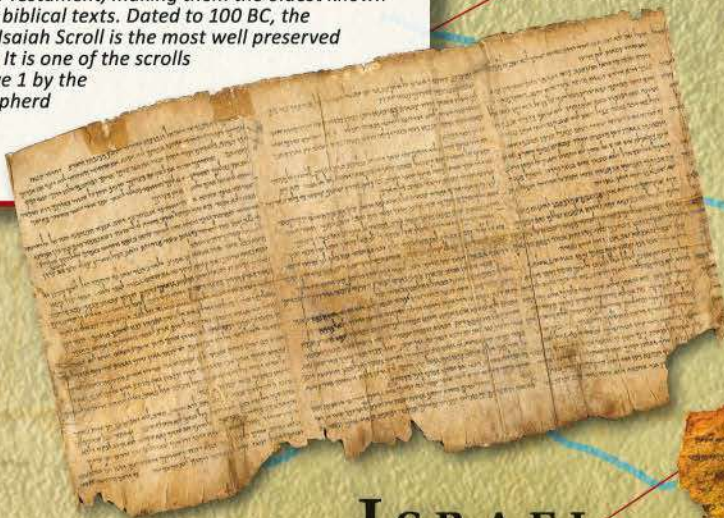


# THOUSANDS OF FRAGMENTS

From 1947 to 1956, archaeologists found the Dead Sea Scrolls in 11 different caves. They discovered everything from tiny papyrus fragments to metres of almost intact scrolls. The fragments have since been assembled into some 900 scrolls. Some contain well-known texts from the Old Testament, such as the well-preserved Isaiah Scroll. Others contain previously unknown religious writings and detailed descriptions of the ascetic lifestyle of the sect that owned the scrolls.

## ISAIAH SCROLL

■ Around 200 of the Dead Sea Scrolls are copies of books from the Old Testament, making them the oldest known examples of biblical texts. Dated to 100 BC, the 7.34m-long Isaiah Scroll is the most well preserved scroll by far. It is one of the scrolls found in Cave 1 by the Bedouin shepherd Muhammid edh-Dhib in 1947.



## QUMRAN

■ Up to 200 members of a sect lived in Qumran around the time of Christ's birth, preparing for the Day of Judgment. The ruins of the sect's settlement and the caves where the scrolls were found held the same type of coins and pottery shards, convincing most scholars that the inhabitants of Qumran were the owners of the scrolls.



## CAVE 3



## CAVE 1



## CAVE 1

## THE COPPER SCROLL

■ The mysterious Copper Scroll stands out from the others: it is the only one embossed in copper and contains no religious precepts. Instead, the scroll lists hidden treasures, notably gold, silver and religious objects. Dated to 50–100 AD, it is younger than the other scrolls.



## TEMPLE SCROLL

■ In the Temple Scroll, God speaks in the first person and dictates the layout of the Temple in Jerusalem – the Jews' central sanctuary. Among other rules, it forbids menstruating women from entering the temple. At 8.1 metres, it is the longest of the Dead Sea Scrolls.



## COMMUNITY RULE

■ The well-preserved Community Rule describes the scroll owners' way of life. It prescribes a daily routine of religious baths, communal prayer and study of religious scriptures. It also shows that the sect shared everything from meals to financial affairs.

## QUMRAN

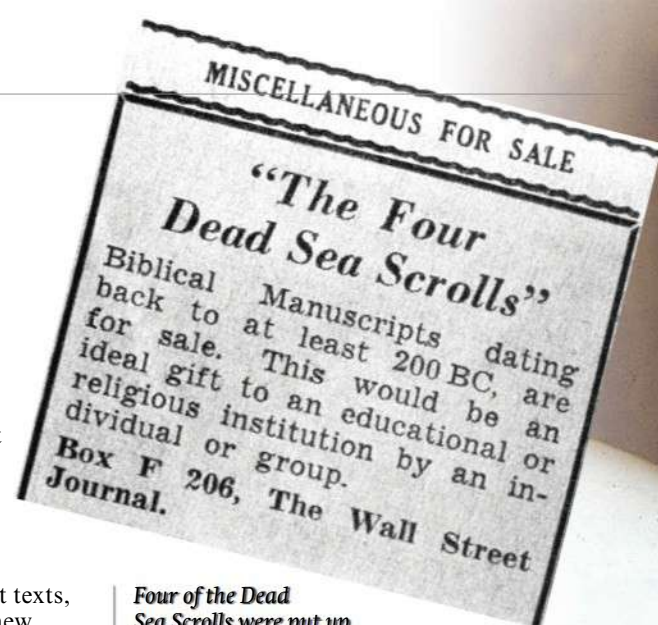
## ISRAEL

## DEAD SEA

The American archaeologist John C Trever was the first to identify the unique character of the Dead Sea Scrolls in 1948.



# “In the monument are 100 golden ingots”



*Four of the Dead Sea Scrolls were put up for sale in 1954 by St Mark's monastery in Jerusalem. The anonymous buyer turned out to be the State of Israel.*

>>> at the time asked de Vaux to put together a team of academics to study and translate the many fragments of text and scrolls that were gradually being collected in the basement of the Palestinian Archaeological Museum in Jerusalem.

By the late 1950s, researchers had identified fragments from 511 different texts, most of which were dated to the period between about 150 BC and AD 70. Uniquely, the scrolls came from a time when Jesus had lived.

Most of the scrolls were made of carefully stitched pieces of parchment made from animal skins, while some texts were scratched on to papyrus. The language was mainly Hebrew, with around a fifth written in Aramaic, and a few in Greek.

The three languages testify that Judaism was a trilingual culture in the centuries surrounding the birth of Christ. Hebrew was used in everyday life and for sacred writings. Aramaic, on the other hand, was the language of international trade – a relic from the heyday of the Persian Empire. Greek, meanwhile, had gained popularity since Alexander the Great's conquest of the region in the fourth century BC, especially among the upper class.

## TEXTS CONFIRMED THE BIBLE

More than a third of the scrolls turned out to be known texts from the Old Testament, making them the oldest written examples of biblical texts that academics had ever had the opportunity to study. The ancient scrolls confirmed that later European translations of the Bible were remarkably accurate and that the scriptures had not

changed dramatically since ancient times; the variations in the Bible that have been discussed in Europe since the first millennium simply reflect the great variation in early Judaism.

In addition to the Old Testament texts, the scrolls also contained entirely new material, most of which academics have categorised as sectarian documents. These texts discuss how an ideal society should be structured and appear to have served as the founding principles of a fundamentalist cult that left the Jewish capital, Jerusalem, in protest against the city's powerful high priests.

“The text lists 64 secret locations where 100 tonnes of gold, silver, coins and religious paraphernalia were cached”

Together, the scrolls provide a highly detailed and vivid snapshot of the last days of the Kingdom of Judah, before its collapse in the first and second centuries AD – a nation in disarray, marked by violent religious and political divisions.

## LIST OF TREASURES

One scroll, however, has arguably sparked more speculation among laymen, scholars and treasure hunters than all the others. The Copper Scroll was found in two pieces by de Vaux in cave three in 1952, but it was too fragile to be unrolled and read. It took three and a half years before the scroll became partially legible. Academics at the University of Manchester Institute of Science and Technology divided it into 23 smaller pieces by peeling away layer upon layer of the rolled-up copper using a specialised miniature circular saw.

Apart from a few records of financial transactions that were found in the caves,

the Copper Scroll is the only Dead Sea Scroll that does not contain hymns, edicts or other religious text.

As the name suggests, the Copper Scroll is further distinguished by being embossed on copper rather than written on animal skin. The text lists 64 secret locations where up to 100 tonnes of gold, silver, coins and religious paraphernalia were cached. “In the monument ... are one-hundred golden ingots,” reads one tempting but cryptic section. The hiding places all appear to have been wells, water cisterns and underground caves.

This list of treasures has prompted several treasure hunters to brave the Judean desert's baking sun. One of the first to hunt for the Copper Scroll's list of treasures was Manchester University scholar John Allegro, who was also one of the first academics assigned to de Vaux's team. Allegro returned home empty-handed, but others have since followed in his footsteps – though no one has found anything so far.

The Copper Scroll, dated to 50–100 AD, is considerably younger than the rest of the scrolls. This difference in age as well as the format and content of the scroll has led academics to question whether it even belongs with the other scrolls. Many experts now believe that it may have belonged to the Temple in Jerusalem, which in addition to being the centre of Jewish religious and social life, also functioned as the Jews' national bank and therefore held great wealth. It's possible that these riches may have been hidden by the bank before the Romans razed the shrine in 70 AD in their efforts to quell a Jewish uprising.

## SCROLL KEEPERS LEFT THE CITY

The caves where the Copper Scroll and other Dead Sea Scrolls were found are very close to the ruins of the small settlement of Qumran. During his excavations in the area in the 1950s, de Vaux found the same kind of potsherds, coins and other objects in Qumran as in the caves, and his findings have convinced most scholars that the inhabitants of Qumran were the owners of

## DECISIVE MOMENTS

### ISRAELI INDEPENDENCE

When Eliezer Kaplan (left) and other Jewish politicians signed Israel's Declaration of Independence on 17th May 1948, it had a decisive impact on the Dead Sea Scrolls.

The Israelis immediately attached great

symbolic value to the discovery of the ancient texts and in the years that followed went to great lengths to secure ownership of the unique scrolls. These efforts paid off: today, most of the Dead Sea Scrolls are in Jerusalem.





*John C Trever ensured that  
the first four scrolls were  
captured on film.*



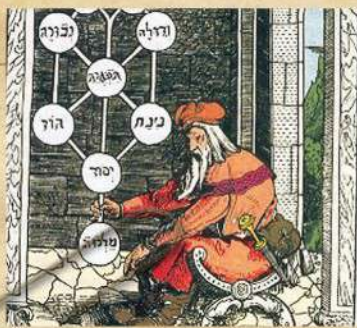


## TECHNOLOGY

## CULTURE

## ECONOMY

## DAILY LIFE



## Mysterious cult suddenly vanished

The fate of the Qumran sect and other Essenes people is lost in the mists of early Judaism, but there may be a connection to contemporary Jewish mysticism. An old legend tells that the Essenes' religion was passed on

orally for centuries until Jewish intellectuals in southern France and Spain decided to write it down in the thirteenth century. Some scholars believe that today's mystical Kabbalah religion is largely inspired by the 800-year-old texts.

>>>> the Dead Sea Scrolls. De Vaux put forward the now widely accepted thesis that Qumran's inhabitants must have belonged to the Essenes – a sect of ascetic, devout Jews described by the ancient historians Pliny the Elder and Flavius Josephus. The ultra-religious lifestyle of the Essenes fits well with the austere life prescribed in the sectarian scrolls.

## A LIFE WITHOUT SIN

The Essenes probably left Jerusalem in the second century BC in protest against the appointment of a new high priest. They considered life in the big cities to be immensely sinful. Instead, they practised a simple and strict religious way of life in small settlements around Judea. They dressed in white and renounced almost all earthly pleasures. The Essenes were careful not to swear, always bathed before meals and after going to the toilet, and made sure to keep the Sabbath holy, which included not answering the call of nature.

Many of the roughly 4,000 Essenes were men who refused to marry because they considered women sinful – and this included the sect of Qumran, the academics believe. The Dead Sea Scrolls describe how the sect was led by a religious figure called

the “Teacher of Righteousness”, who sharply divided humanity into good and evil. The sect's members saw themselves as “Children of Light” and expected to fight victoriously against the “Children of Darkness” – which was pretty much everyone else – on the final day. Until the Day of Judgment, the zealots led an isolated existence in the desert as a self-sufficient working collective. Every day began with communal prayer, before the men set about tending their sheep, beehives and barley.

A widely accepted theory today is that during the Jewish revolt of 66–70 AD, the Qumran sect hurriedly moved their religious library to safety in nearby caves before the Romans razed the settlement.

## WRITTEN BY CHRISTIANS?

The lifestyle of the Qumran sect has certain similarities with the first Christian communities. This has given rise to several theories about a connection between the scrolls and early Christianity.

The interpretation of the old manuscripts is extremely complex. Many of the fragments contain only a few clear

words, so historians are often forced to use guesswork when trying to decode the scrolls' content. This uncertainty prompted one of de Vaux's collaborators, British scholar John Allegro – the man who went in search of the Copper Scroll's treasures – to claim that the Catholic Church was trying to suppress aspects of the scrolls' content. Allegro claimed that the scrolls contained secrets that could undermine the Catholic Church. The theory was fuelled in part by the fact that de Vaux's Catholic-funded research team was the only set of academics allowed to access the scrolls, and that the time between the team completing translations and their work being published was getting longer and longer.

Throughout the 1950s, John Allegro's distrust of the research team led by de Vaux grew. By that point, most of the

archaeologists and historians associated with the work were Catholics – a fact that further fuelled Allegro's suspicions.

“I am convinced that if something does turn up which affects Roman Catholic dogma, the world will never see it,” John Allegro told one of his colleagues at the time.

In 1956, he wrote to one of the other members of the research team that “the non-Catholic members of the team are being removed as quickly as possible”.

Others have since latched on to the British scholar's suspicions. In the 1991 bestselling treatise *The Dead Sea Scrolls Deception*, Michael Baigent and Richard Leigh single out none other than Cardinal Joseph Ratzinger, now Pope Benedict XVI, as the man who allegedly orchestrated the Catholic Church's years-long effort to conceal information that was “inimical to Church doctrine”.

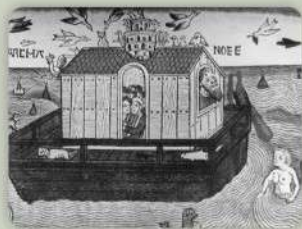
During the 1970s and 1980s, criticism of the research team's monopoly over the scrolls snowballed, and eventually a few of the team's own members began publishing

25,000

Dead Sea Scroll fragments were counted by academics.

## FOUR BIBLICAL MYSTERIES

*For centuries, faithful treasure hunters, crusaders and scholars have sought Christianity's holiest relics, but so far the existence of true artefacts has been hard to prove. The Bible's stories persist, however.*



## NOAH'S ARK

■ Several expeditions have searched mountaintops in the Middle East in vain for the remains of Noah's Ark. There may be some truth behind the story, however. Some scientists believe that the Bible's flood describes what happened when the Mediterranean Sea broke through the Bosphorus Strait during the last ice age.



## THE SHROUD OF TURIN

■ The Shroud of Turin is one of the most important relics of the Catholic Church and is still a highly venerated object to some Christians today. According to believers, the shroud is the linen cloth in which Jesus was wrapped after he was taken down from the cross. The cloth bears the image of a man with wounds that correspond to those supposedly inflicted on Christ before he died. The cloth, which is kept in the Cathedral of St John the Baptist in Turin in northern Italy, came into the possession of the princely house of Savoy in 1453, but is demonstrably much older. In 1988, carbon-14 analysis dated the shroud to between 1260 and 1390 – a result that has since caused much debate. Critics believe that the test inadvertently analysed material that was added to the shroud later.



material independently. At the same time, the journal *Biblical Archeology Review* spearheaded a campaign for open access to the Dead Sea Scrolls. Between 1988 and 1994, its efforts finally paid off as more people were permitted to study the scrolls.

#### THE SCROLLS GO ONLINE

Since then, archaeologists and biblical historians from various backgrounds have examined the precious scrolls and a broad consensus has slowly emerged that the texts do not contain any crucial new information about early Christianity. On the other hand, the Dead Sea Scrolls are undoubtedly one of the most invaluable sources of knowledge about conditions in Judea and the Jewish way of life in the centuries before and after the birth of Christ.

However, work on the scrolls is far from complete. Since Roland de Vaux's team began its painstaking, traditional

palaeographic study of the Dead Sea Scrolls, computer science and technology has come a long way and it now plays an increasingly important role in the interpretation of these ancient manuscripts.

In 1997, the entire body of material was published in *The Dead Sea Scrolls Electronic Reference Library*, a CD-ROM database with translations and photos of all scrolls and fragments. Then, in autumn 2010, the Israeli authorities announced that their Dead Sea Scrolls would be rescanned and released online in collaboration with internet giant Google. The site went live in 2011, so now, at last, the whole world can see these unique documents and make their own judgement about what they mean. ■

The Dead Sea Scrolls are now available in digital form so that academics around the world can study them.



#### ARK OF THE COVENANT

■ According to the Old Testament, the Ark of the Covenant is made of gold-plated acacia wood and contains the tablets of the Ten Commandments. The Ark was the centre of Jewish religion for centuries, but was probably destroyed in 587–586 BC when Jerusalem fell to the Babylonians. The Crusaders searched for the Ark, supposedly in vain. Persistent myths claim otherwise, however, and say that the Ark is hidden in the Vatican's vaults or in the desert near Qumran.



#### THE HOLY GRAIL

■ The Holy Grail is most often described as the cup from which Jesus drank at the Last Supper. According to one version of the legend, Joseph of Arimathea collected Jesus's blood in the chalice, and his family brought the Grail to England, founding the country's first Christian community in Glastonbury. Monks at Glastonbury's later monastery happily wrote down the myth, and the Grail acquired great symbolic significance.









# RAPA NUI'S SECRET

900-1877

Around 1,100 years ago, after sailing for thousands of kilometres, Polynesian tribespeople arrived at a small, isolated island in the middle of the Pacific Ocean. Here they created a thriving culture and erected hundreds of giant statues that still fill visitors with wonder. But for some reason, Rapa Nui's society suddenly collapsed and for 100 years academics have struggled to find the truth behind Easter Island's mysteries.





## 900-1877

**Circa 900**  
The first people settle on the island – the year is uncertain.

**Circa 1100**  
Islanders begin erecting large stone statues.

**1722** The first Europeans discover and name Easter Island.

**1877** The population of Easter Island is down to 111.

900 >>>

1100 >>>

1722 >>>

1877 >>>

**T**housands of kilometres from its nearest neighbour, Easter Island lies isolated and windswept in the middle of the Pacific Ocean. Along its coast, tall stone figures sit on enormous platforms. The backs of the giants' flat heads are turned to the sea, while their empty eye sockets stare out over the barren grasslands. Scattered around the 171-square-kilometre island, even more of the heavy figures lie lifeless in the grass, some of them broken into several pieces. All bear witness to a distant past when a rich culture dominated the small island and invested huge effort in carving, transporting and erecting ever-larger statues.

Today, scholars understand the island and its grim past far better than the first European explorers, who gazed in wonder at the barren island with its huge statues in 1722. But archaeologists and historians still argue about why the once-fertile island's ecosystem apparently collapsed in the early 1600s, how the islanders managed to transport the statues several kilometres around the hilly volcanic island, whose native name is Rapa Nui, and what became of the community that erected the statues.

### ISLANDERS' ORIGINS WERE UNKNOWN

For a long time, historians also debated where the island's first inhabitants came from. Oral histories from Easter Island's own residents say that the island's first king, Hotu Matu'a, came sailing from the west, heading for the sunrise. His homeland was called Hiva, and legend has it that

Hotu Matu'a had been defeated in war when a vision compelled him to leave and sail off into the unknown. On the day Hotu Matu'a arrived on the island with his large retinue, his wife gave birth to a boy – a harbinger of the good life Hotu Matu'a's family was now about to have on the island.

The famous Norwegian ethnologist and adventurer Thor Heyerdahl refused to take this story at face value. He was convinced that the original inhabitants of Easter Island were more likely to have come by boat from South America. Heyerdahl

### 17 days:

historians estimate that's how long it took the first Polynesians to sail to Easter Island.

believed he could recognise the building methods and custom of erecting statues from ancient South American societies, and to prove his theory, he sailed a balsa wood raft from Peru to eastern Polynesia in 1947. The Norwegian's spectacular expedition took 101 days,

and he believed he had proved his theory.

Heyerdahl's arguments seemed convincing to many other academics for a long time, but today most historians agree that it was the islanders themselves, not Heyerdahl, who were correct. Linguists point out that the original language of Easter Island is similar to other Polynesian languages further west, just as the custom of erecting large statues is also known from other Polynesian communities. In 2003, Norwegian geneticist Erika Hagelberg of the University of Oslo dealt the death blow to Heyerdahl's theory – she analysed skeletal remains found on Easter Island and found that they contained a particular

genetic marker that established the Polynesian background of the Easter Islanders.

### MASTERS OF SEA

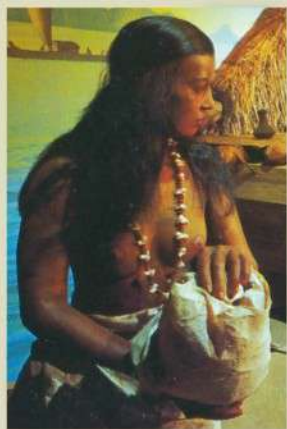
Even though the nearest Polynesian islands are thousands of kilometres away, it's not at all impossible that the Polynesians could have ventured so far. The islanders were incredible sailors and some of the most skilled navigators the

*The Polynesians' most skilled navigators could find their way by feeling the ocean currents on their bodies.*

### MEANWHILE IN HAWAII

#### POLYNESIANS TOOK HAWAII

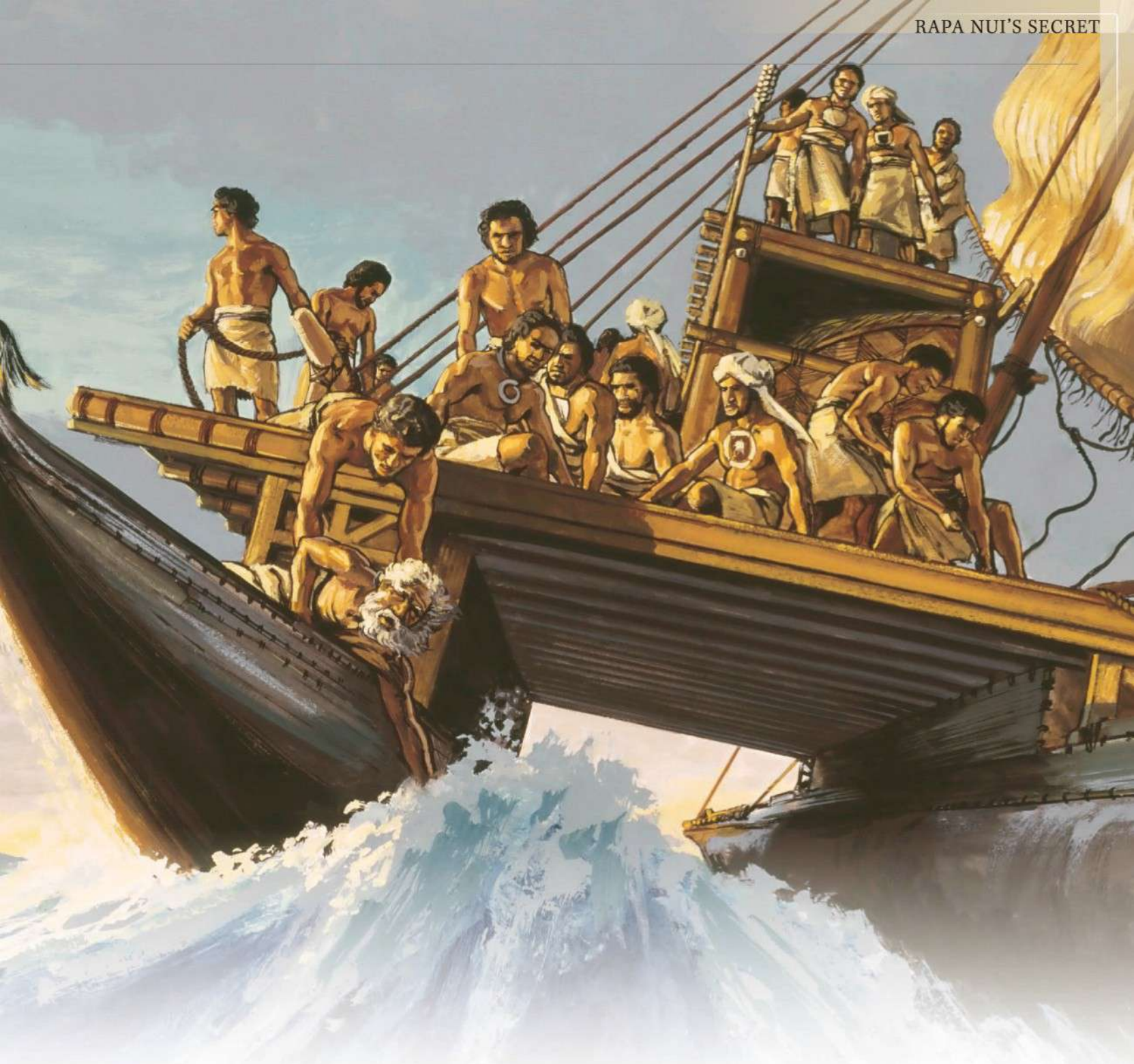
**A**s the first humans landed on Easter Island, a Polynesian island community was already flourishing in the Hawaiian Islands. Historians believe that explorers from western Polynesia arrived in the Pacific Northwest around AD 300. Bringing bananas, coconuts, pigs, chickens and dogs enabled the settlers to found a new community, and Hawaii's population exploded. When James Cook became the first European to reach the islands in 1778, there were between 200,000 and one million people living there.



world has ever seen. They honed their skills in western Polynesia, where they developed an in-depth knowledge of the night sky and learned to navigate using the stars. The Polynesians also used the shape of waves to steer on the high seas, and knew how land masses affect clouds and currents. Some experienced navigators even immersed themselves in the water up to their waists, so they could feel the currents and waves on their scrotums – one of the most sensitive parts of the body. The Polynesians were also skilled at interpreting the movements of birds; an island less than 15 kilometres across, like Easter Island, could be located by the experienced navigators in an area 320 km wide based on birds' flight patterns.

While academics today agree that Easter Island was colonised by Polynesians, they





are not sure when. Carbon-14 analysis of burnt wood points to a settlement date as early as AD 300–400, but the results are subject to considerable uncertainty.

Most historians now estimate that the first Polynesian canoe docked at Easter Island around AD 900, while a few argue for an arrival date as late as 1200.

What is certain is that when the first people arrived on the island, it looked very different from today. The world's largest palm trees grew on the now barren grassy slopes. They rose more than 20 metres above the surface of the island, and their trunks measured several metres across. But they weren't even the largest trees on the island; other

varieties in Easter Island's lush forests towered as high as 30 metres. Around the island, albatrosses, frigate birds, guillemots, parrots and a host of other bird species bred. For the first people to see this tiny green speck in the endless blue Pacific, after thousands of kilometres of sailing, it must have looked like a giant larder.

*Te Pito o Te Henua* is what the islanders chose to call their new home – the Navel of the World. The settlers brought with them chickens,

bananas, yams and more – including rats, which were either brought as food or as accidental stowaways. A fateful companion, as it turned out.

The island's new inhabitants immediately set to work growing their crops, feasting on wild birds and felling the island's large trees. The timber was used for fuel, and the largest logs were hollowed out by the islanders into large seaworthy canoes, in which they sailed far out to sea to hunt dolphins.

Soon the few hundred original settlers grew into an island community of several thousand inhabitants, which was subdivided into 11 or 12 different clans. Rapa Nui was the name they gave themselves and their island. From around 1100–1200, the islanders began to carve and >>>



*The first inhabitants of Easter Island brought chickens in their canoes.*





>>>> erect the famous stone pillars. Life on the forested Pacific island flourished.

#### DUTCHMAN WAS STUNNED

But at some point, something went wrong. When the first European sailors arrived on Easter Island, the isolated land was transformed – the lush forest was gone.

Dutchman Jacob Roggeveen was the first European to land on Easter Island. He spotted the tiny land mass on Easter Sunday, 5th April 1722, and named it Easter Island. What the Dutchman and his crew

saw was no longer the lush land in the middle of nowhere that the first Polynesian canoeists had spotted 800 years earlier. From a distance, the island looked so barren that the Dutch sailors thought it was completely devoid of vegetation. Closer, the sailors could see that the island was covered with green grass and shrubbery – but the once mighty trees were nowhere to be seen. All around the island stood the silent statues, looking out over the landscape.

Roggeveen estimated that around 3,000 people lived inland, growing bananas, sweet potatoes and some exceedingly thick sugar cane. He was amazed by the statues:

“We could not understand how it was possible that people who are destitute of heavy or thick timber, and also of stout cordage, out of which to construct gear, had been able to erect [these statues].”

The islanders’ canoes, the Dutchman wrote in his diary, were merely crude rafts that couldn’t travel more than a few kilometres from shore. Gone were the seaworthy canoes their ancestors had used to colonise the island and catch dolphins.

After just one day, the Dutch crew left the island and continued their search for more undiscovered Pacific islands.

Fifty years later, on 1st March 1774, the famous British explorer James Cook called at Easter Island with his ships *Resolution* and *Adventure*. The land had been transformed. Many of the huge statues lay toppled in the grass, and some were broken into several pieces. The inhabitants, whom

*In 1774, James Cook’s expedition reported human bones lying at the feet of the mighty moai.*

Roggeveen had described 50 years earlier as strong and well built, were now extremely weak and thin, Cook noted. On one of the platforms where the statues stood were the remains of a human skeleton. Cook and his people were witnessing a society in decay.

#### STATUE MYSTERY STILL UNSOLVED

With the arrival of Cook, Roggeveen and the later flood of European explorers to Easter Island, the world’s first tentative attempts to understand what happened on the small, isolated isle with its large statues

began. The answer is still being pieced together by historians from islanders’ oral traditions, archaeological excavations, advanced carbon-14 dating and the diaries of the first European visitors.

Naturally, one of the first puzzles historians tackled was how the Easter Islanders

managed to carve, transport and erect the hundreds of huge statues, known as *moai*.

Near the crater lake of the extinct volcano Rano Raraku lay 397 unfinished figures, which quickly proved to archaeologists that this was where the islanders had carved the mighty stone pillars out of the soft, yellow-brown rock known as tuff. At the Rano Raraku quarry, researchers also found the simple tools used by the islanders in their tireless carving: >>>>>>

#### EYEWITNESS

JOHANN FORSTER/James Cook’s visit in 1774

#### ISLAND WAS PARCHED



“The surface of the isle in general appeared to be extremely dreary and parched, and these plantations were so thinly scattered upon it that they did not flatter our hopes of meeting with refreshments. The whole number of

plants growing upon [this island] does not exceed twenty species. The nicest calculations ... never brought the number of inhabitants in this island beyond 700, who, destitute of tools, of shelters, and clothing, are obliged to spend all their time in providing food to support their precarious existence.”



# ISLANDERS STOLE EUROPEANS' HATS

*Descriptions of the first European visitors repeatedly show that the inhabitants of Easter Island were greatly enchanted by the visitors' hats. While the island's women made them welcome, the men were quick to lift the hats from the sailors' heads. The islanders valued headgear so much that their statues wore hats, too.*

“Groups of women salaciously presented to groups of sailors”



European sailors' tricorn hats soon became the height of fashion among Easter Island's inhabitants.

■ The French Pacific sailor Jean François de Galaup La Pérouse had brought knives and pearls as gifts for the Easter Islanders when he visited in April 1786 in his two ships, the *Astrolabe* and *Boussole*. But the Indians, as La Pérouse called the islanders of Rapa Nui in his diary, were far more interested in the Frenchmen's foreign clothes – not least their hats. Although La Pérouse's expedition only spent one day on Easter Island, the islanders managed to steal almost all the sailors' hats.

“Not only did the islanders snatch hats when the opportunity presented itself but specific schemes were enacted to lure the crew of the *Astrolabe* and *Boussole* into position for hat acquisition. Groups of women salaciously presented to groups of sailors,” wrote the frustrated expedition leader, continuing, “While our attention was attracted to these tricks of the women, our hats were taken from our heads.”

Several other European explorers, including James Cook, experienced the same enthusiasm for hats among the Easter Islanders.

## Hats were already popular

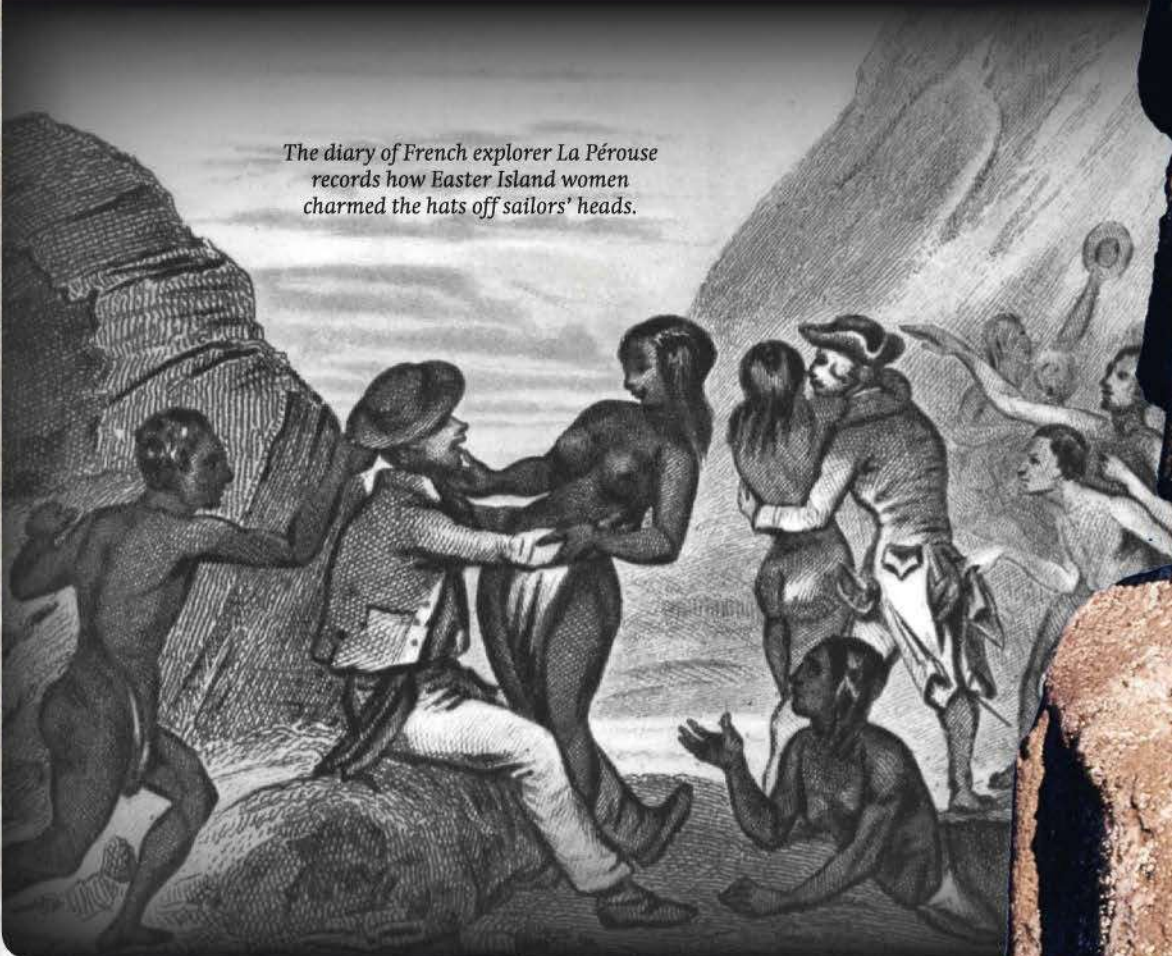
Academics now believe that the islanders found the Europeans' hats so desirable because they already valued headwear. Some islanders wore huge

feathered hats, and some of the island's famous moai statues feature giant red stone headgear, possibly symbolising the red feather hats that were worn by chiefs across Polynesia.

## Sexually transmitted diseases made islanders sterile

However, the love of hats was not necessarily the only reason why the Easter Islanders pimped their women to European sailors. Sexually transmitted diseases spread quickly after the first Europeans visited in 1722 and may have rendered many of the inhabitants sterile as early as La Pérouse's visit. By offering sex to the sailors, the islanders perhaps hoped to help sustain a population that could no longer reproduce itself. In any case, La Pérouse's people were offered girls as young as 13 – much to the Frenchman's dismay: “None of our people availed themselves of the barbarous right thus was attempted to be conveyed to them; and if certain moments were devoted to nature, the desire and consent were mutual, and the women made the first offers.”

The diary of French explorer La Pérouse records how Easter Island women charmed the hats off sailors' heads.





# “Myths say the statues were imbued with supernatural powers”

>>>> small basalt picks. From the quarry, the statues were transported to platforms around the island, which the islanders called *ahu*. The platforms consist of a square brickwork filled with stones, earth and gravel. The largest ahu measure 60 metres in length and seven metres in height, and a total of 300 of them are scattered around the island.

## TRANSPORT MYSTERY

To this day, one of Easter Island's biggest mysteries is how the statues got from the quarry to their ahu – many of the platforms are several kilometres from Rano Raraku.

Easter Island oral lore says the statues were imbued with supernatural powers and walked themselves from the volcano to their location – but most academics understandably doubt this theory. Instead, some surmise that the statues were wrapped in leaves and grass to protect them, then mounted on sledges made of tree trunks, which in turn rolled on an extra layer of tree trunks smeared with palm oil. This method is used for the transport of giant canoes elsewhere in Polynesia.

However, some historians think it more likely that the statues were transported upright, and that this is why the islanders say they walked. Norwegian Thor Heyerdahl carried out a series of practical experiments in the 1950s, which showed that you could actually move a moai statue by tying ropes around the head and base of the figure and then pulling on the ropes in turn. However, the Norwegian's experiment didn't convince

everyone – partly because the rocking damaged the statue Heyerdahl was moving.

However, on the same occasion, the Norwegian found a method of raising the statues that is still widely accepted as that used by the Easter Islanders of the past: the islanders slid wooden pole-like levers under the figure to tilt it slightly upwards, then placed large stones under the figure to rest it on. Once the moai was resting on the stones, the islanders could stick wooden poles under the statue again, tilt it up a bit and put more stones underneath. In this way, they gradually built a ramp of stones under the statue, which slowly became more and more upright. In 18 days, 12 men were able to erect a 25-tonne statue.

Subsequent trials have shown that the same method could be used to erect a statue wearing one of the heavy red hats – called *pukao* – originally worn by some of Easter Island's many moai.



*Rapa Nui's incomprehensible Rongorongo script probably originated after the arrival of the Europeans.*

## MASS LOGGING DEPLETED ISLAND

No matter how the statues were moved and erected, no one can imagine that it could have been done without the use of both ropes and logs. When the trees eventually disappeared, and with them the plants that could be used to make ropes, the Easter Islanders were no longer able to erect their moai. Historians agree that moai building ceased around 1600 and that the Easter Island trees probably disappeared around that time. Using pollen analysis of the island's soil, researchers can see that trees began to disappear on a large scale on the island as early as circa 1100 – the question is

why this happened. The disappearance of the trees is one of Easter Island's biggest mysteries, and scholars are still divided over the causes.

Many historians believe that a key factor was the massive growth in the population that the verdant island supported in the first centuries of human habitation. The growing number of islanders – perhaps as many as 30,000 when the island was most densely populated – cut down trees on a huge scale to build canoes, raise moai, cook food and cremate their dead. Gradually, the trees became fewer and fewer, and at one point the forests died out completely. An underlying cause was Easter Island's fragile ecosystem, academics point out; the climate is colder and drier than on many other Polynesian islands, where trees grow almost faster than they can be cut down.

Other scholars doubt that Easter Island ever had enough inhabitants to cut down all the trees. Instead, they blame the death of the forest on the rats the islanders brought with them. The rodents had no natural enemies on the green island, and their numbers quickly multiplied. They ate through plant shoots and seeds, so the trees had no chance to grow back when the islanders cut them down. Archaeological evidence supports the claim that the rats did damage the island's forests: every nut from the great palms of the past that researchers have ever found on Easter Island has borne clear traces of rat bites.

Finally, some historians believe that climate change, rather than rats or human logging, caused the trees to disappear. The Little Ice Age, which stretched from the Middle Ages to the early twentieth century, had one of its coldest periods in the years from 1650 onwards. Temperatures on the Pacific island probably dropped dramatically, while the weather became markedly more violent, with major storms. Proponents of the theory believe that the changing climate caused Easter Island's forests to die out.

## WITHOUT TREES ISLANDERS STARVED

However the trees disappeared, researchers and historians agree that it had far-reaching consequences for life on Easter Island. The lack of trees caused the soil to wash away when it rained, and indigenous animal and plant life disappeared. The island became far less fertile – even for the islanders' crops. Polynesian farmers adapted by building small, enclosed gardens to protect their crops from the sea's salt and wind. They also stepped up their poultry farming efforts – archaeologists have now found as many as 1,233 stone chicken coops on the tiny island.

However, the measures failed to keep hunger at bay. Carved wooden figures that have been found, with sunken stomachs and pronounced ribs, bear witness to periods of famine, and many historians believe that the multitude of stone arrowheads and spearheads found on the island should be interpreted as evidence of fierce civil wars between clans over the island's remaining resources. In all

### TECHNOLOGY.....

### CULTURE.....

### ECONOMY.....

### DAILY LIFE.....



## Scots turned island into sheep farm

After Chile's annexation of Easter Island in 1888, it was leased to the Scottish Williamson-Balfour Company, which turned the whole island into a sheep farm. The islanders were forbidden to leave the village of Hanga Roa

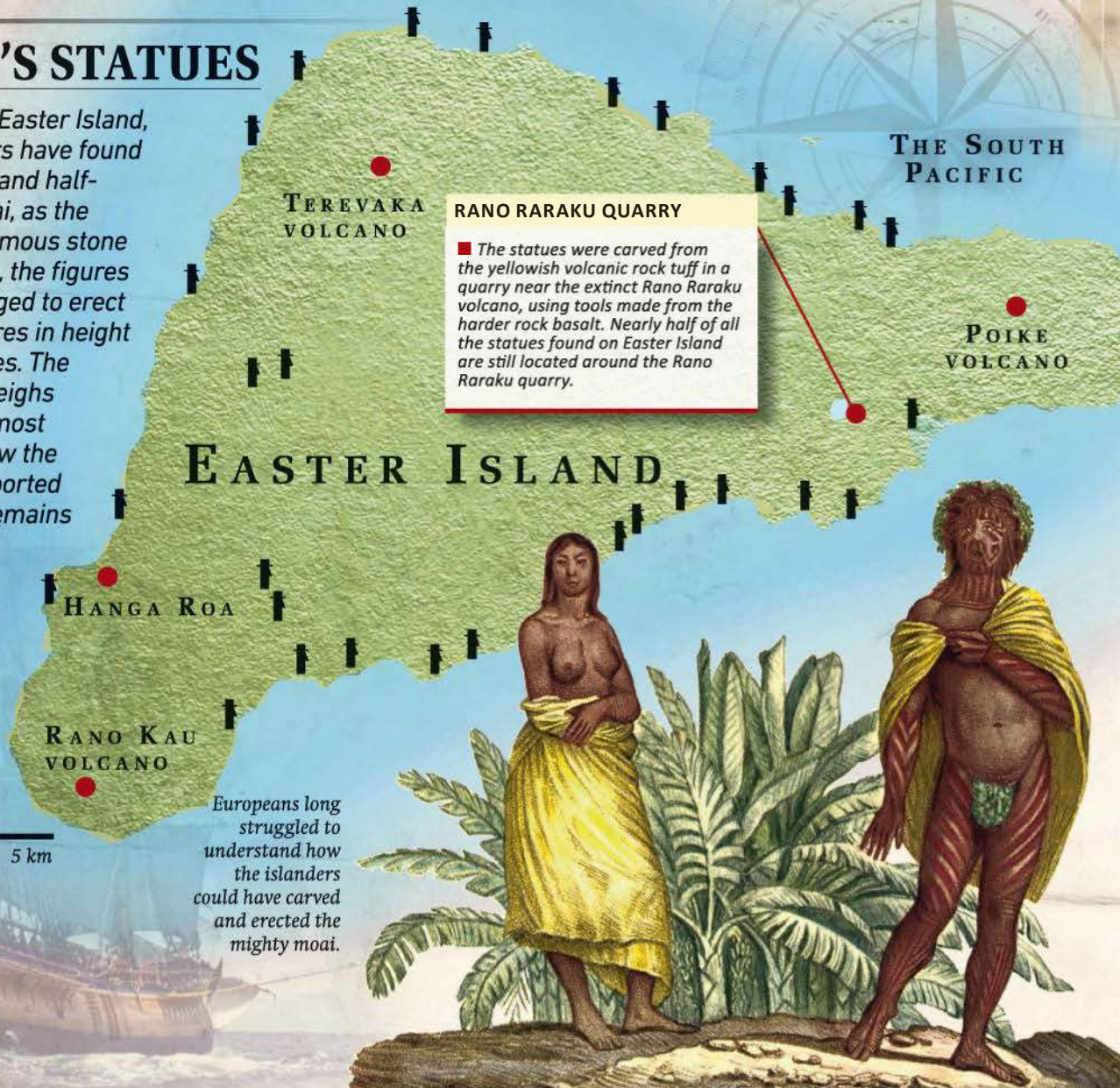
without permission and were paid only in goods for their work with the animals. The company's sheep, horses, goats and cows consumed some of the last native plants, to the detriment of the already depleted island.



# RAPA NUI'S STATUES



All around Easter Island, researchers have found 887 whole and half-finished moai, as the islanders call the famous stone statues. On average, the figures the islanders managed to erect measure three metres in height and weigh ten tonnes. The largest, however, weighs 75 tonnes and is almost ten metres high. How the statues were transported around the island remains a mystery.



Thor Heyerdahl

## ADVENTURER CRACKED RIDDLE

Norwegian ethnologist and explorer Thor Heyerdahl solved the mystery of how the island's giant moai were erected during his visit to Easter Island in 1955–56. He had the simple idea of asking the islanders themselves, and it turned out they still had their ancestors' knowledge. Using stones, poles and ropes, the islanders showed the Norwegian how the huge stone pillars could be erected without the use of large cranes or other sophisticated machinery.



**1** Heyerdahl discovered that the back was the final part to be excavated before the statues were finished.



**2** Using poles, the islanders tilted the statue a little at a time and slowly built a higher and higher stone ramp beneath.



**3** The most difficult task was to tilt the statue the final few degrees into a vertical position. Some statues overbalanced, tipped backwards and broke. To counteract this, the statues were carved so that they leant slightly forwards. The inclination wasn't visible to the naked eye, but enough to save many statues.



## TECHNOLOGY.....

## CULTURE.....

## ECONOMY.....

## DAILY LIFE.....



## Rapa Nui under threat again

Today, Easter Island is one of the Pacific's top tourist attractions, and the large number of visitors is taking its toll on the fragile island. The rubbish dump is overflowing, and sewage threatens to pollute the scarce

groundwater. Although cargo planes arrive frequently with supplies, they are not enough to keep shop shelves stocked. Even a brief interruption of regular flights would lead to catastrophic food shortages on the island.

>>>> likelihood, the islanders also began to eat one another – the islanders' oral histories are filled with accounts of cannibalism, and broken human bones have been found around the island, apparently cracked open to extract the nutrient-rich marrow.

### ISLANDERS TOPPLED STATUES

At some point, Rapa Nui's islanders also began toppling their mighty statues, and they apparently went to great lengths to destroy them, too. Several of the figures have been found broken over carefully placed stones that the statues hit when falling. Exactly when and why the statues were destroyed is still unclear.

The first Dutch visitors in 1722 did not report any toppled statues, but as Jacob

Roggeveen and his crew only went ashore for a single day at a single spot on the island, there may well have been figures elsewhere on Rapa Nui that had been pushed over even then. Certainly, when James Cook's British expedition landed on Easter Island in 1774, the sailors found many of the statues had been toppled. By 1868, not a single upright figure remained – apart from those that were half or completely buried under centuries-old layers of earth.

Experts in Easter Island history believe the statues may have been toppled for several reasons: perhaps during conflicts among themselves, clans began destroying each other's statues as the ultimate humiliation. Or the Easter Islanders may have toppled the statues as part of a

rebellion against their ancient religion, which could not protect them from the calamities that were now raining down on the desperate people.

### EGG ON HEAD BESTOWED POWER

The landing of European sailors on Rapa Nui had devastating consequences for the inhabitants of the remote island. After hundreds of years of isolation in the middle of the Pacific, the islanders' immune systems were completely unprepared for the bacteria, viruses and sexually transmitted diseases that the sailors brought with them from across the globe. Epidemics probably spread as early as 1722, after Jacob Roggeveen and his Dutch crew visited the island, and certainly after a Spanish expedition visited the island in 1770 and – according to the Spaniards' records – took a fancy to Polynesian women during their six days there. When James Cook's expedition arrived in 1774, the islanders numbered no more than 700, the British crew noted.

As the island's social and religious life collapsed, a new group emerged in a desperate attempt to halt the total decline – the Birdman sect. At the centre of the new religion was the god Makemake, half bird and half man, who symbolised both freedom and fertility.

Now, every September, the clans gathered in the village of Orongo, across the water from the tiny island of Motu Nui, to crown the Birdman of the Year. Each





clan chose a young man whose task was to climb down a steep cliff to swim two kilometres through the foamy, shark-filled waters to Motu Nui. Here he had to find the first tern egg of the year – a mission that could easily drag on for days. When one of the participants finally found the first egg, he had to plunge back into the waves and carry it safely back to Easter Island secured by a ribbon around his head. The winner would spend the following year in a special house, where his role was to distribute the island's scarce resources.

The Birdman sect was unable to stop the decline of Easter Island. In the 1860s, Peruvian slave ships repeatedly docked off the coast of Rapa Nui. The slave traders took all

the islanders they could get their hands on – probably around 1,500 – and sailed them to a small island off Peru to scoop up valuable bird droppings. Later, a group of missionaries managed to free the islanders and sail them back to Easter Island, but it was almost too late. Only 15 remained.

At the same time, repeated smallpox epidemics took a heavy toll on the remaining population, and the last Birdman ceremony was held in the presence of Christian missionaries in 1867.

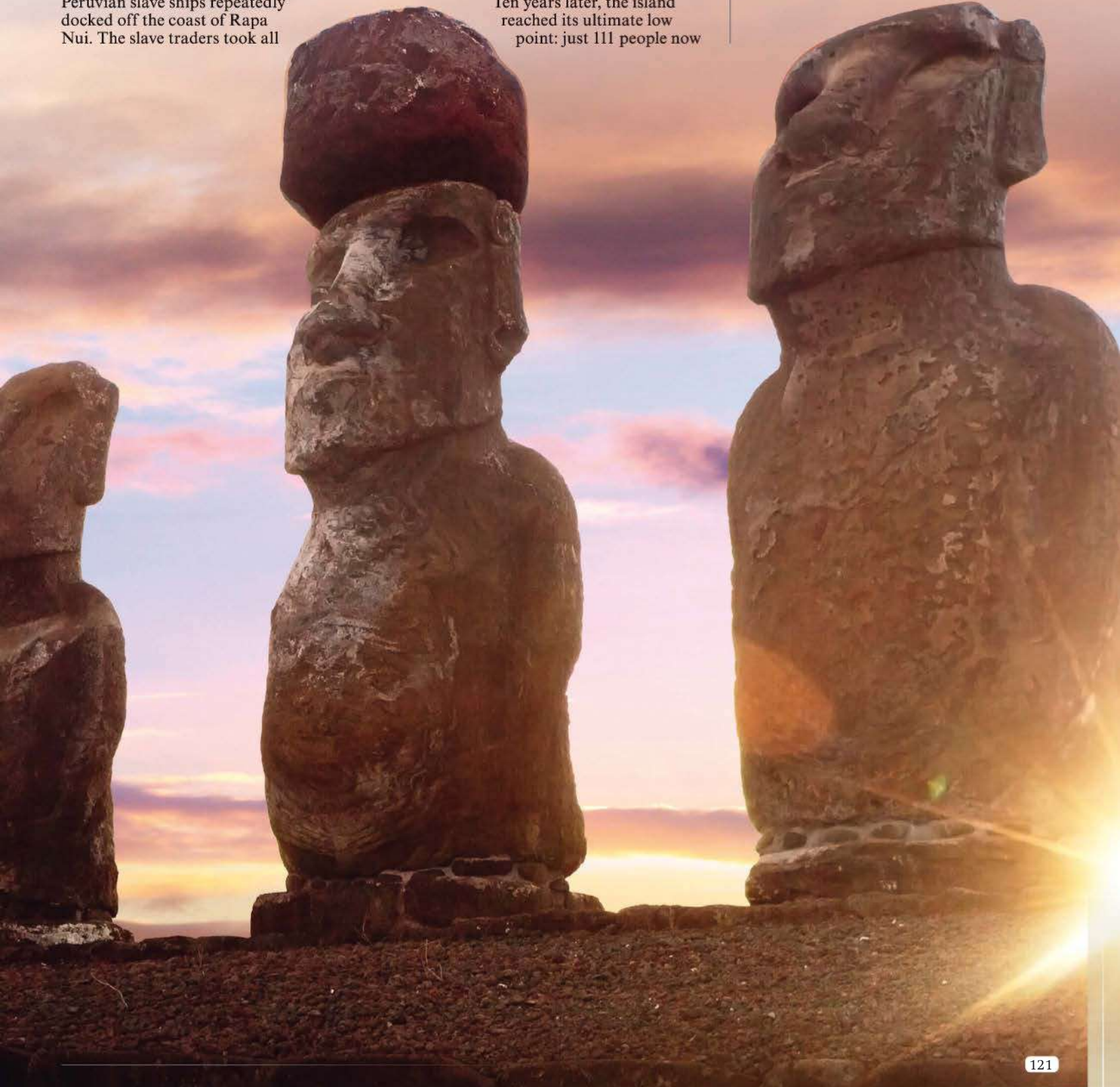
Ten years later, the island reached its ultimate low point: just 111 people now

lived on what had once been a thriving island of thousands.

Today, the population is back up to 5,000, and the mighty moai once again stare out over the Easter Island grasslands. Many have been restored during the 20th century for the pleasure of the tourists who now walk around taking photos among the ancient stone giants.

Occasionally, a plane lands carrying researchers hoping to find the definitive answer to why Easter Island suffered such a sad fate. ■

**"The flesh of your mother is stuck between my teeth" was supposedly one of the islanders' crudest insults.**





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**PUBLISHING DIRECTOR:** Elisabeth Halmø

**EDITOR-IN-CHIEF:** Ann Qvist

**PRODUCTION:** Eva L. Strandmose

**TRANSLATORS:** Nick Peers, Karen Levell, Katharine Davies

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Tel: 0330 390 6464  
Hello@Marketforce.co.uk

### LICENSING AND SYNDICATION:

Regina Erak – regina.erak@globalworks.co.uk  
Tel: +44 (0)7753 811622

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# New findings turn ancient myths into reality

In the sixth century, King Arthur saved Britain from invaders and united the island's petty kingdoms into the realm we know today. For a long time, academics believed Arthur was just a legend, but archaeologists have now uncovered evidence that suggests he did exist, after all. Our view of the past constantly changes as modern research reveals new truths. But as old questions are answered, new ones emerge. We know today, for example, that the young pharaoh Tutankhamun was inbred, crippled and died suddenly. But scientists are still debating the cause of death. In this issue, we explore some of history's most fascinating myths to separate fact from fiction.

Dramatic narrative pulls you in

Vivid illustrations help bring the past to life

Beautiful maps give an overview of the story

